

PETERSBURG  
VIRGINIA

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ECONOMIC AND MUNICIPAL

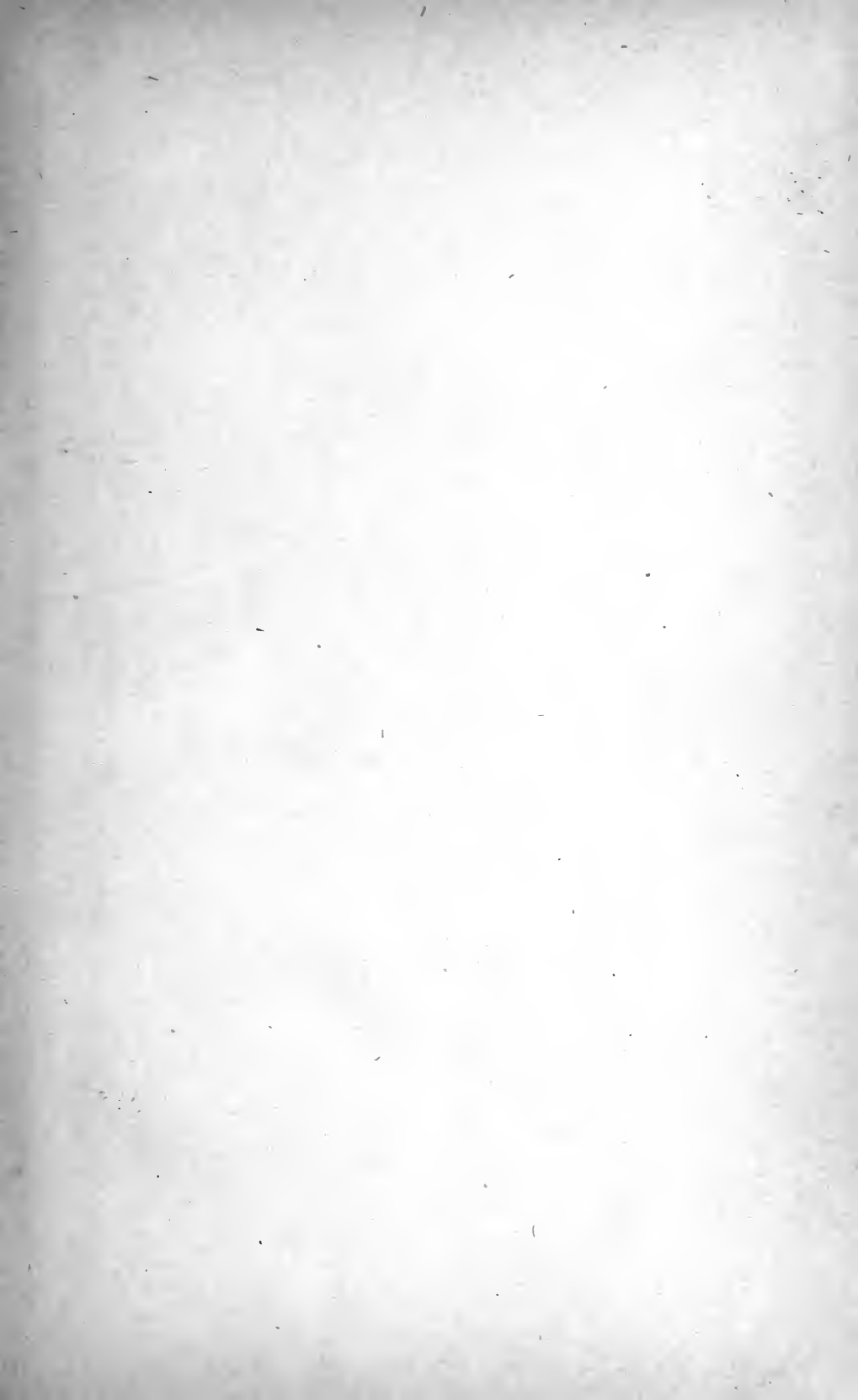


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# PETERSBURG VIRGINIA

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## ECONOMIC AND MUNICIPAL

BY

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PREFACE BY

W. JETT LAUCK

*Director, Bureau of Applied Economics, Washington*



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PETERSBURG, VIRGINIA

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JANUARY, 1917

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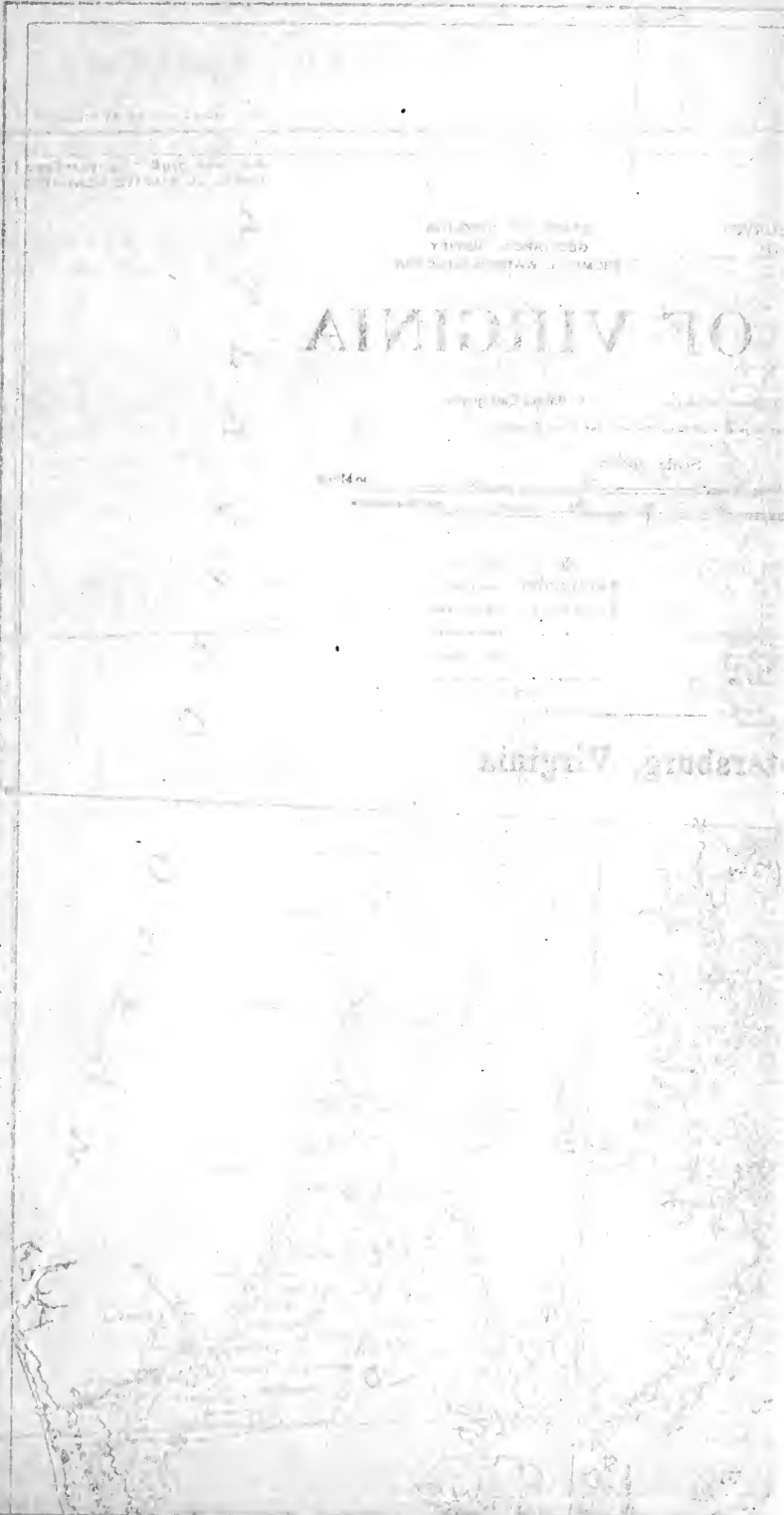
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Published by the  
Geological Survey of the  
Department of the Interior

WASHINGTON  
1900

# OF VIRGINIA

Geological Survey

Scale

1 inch = 10 miles

Geological Survey  
Department of the Interior  
Washington

Virginia Geological Survey

VIRGINIA  
WESTERN PORTION  
ON SAME SCALE

U. S. GEOLOGICAL SURVEY  
GEORGE OTIS SMITH  
DIRECTOR

STATE OF VIRGINIA  
GEOLOGICAL SURVEY  
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# STATE OF VIRGINIA

R. B. Marshall, Chief Geographer

A. F. Hatten, Cartographer

COMPILED IN 1916 IN COOPERATION WITH THE STATE OF VIRGINIA

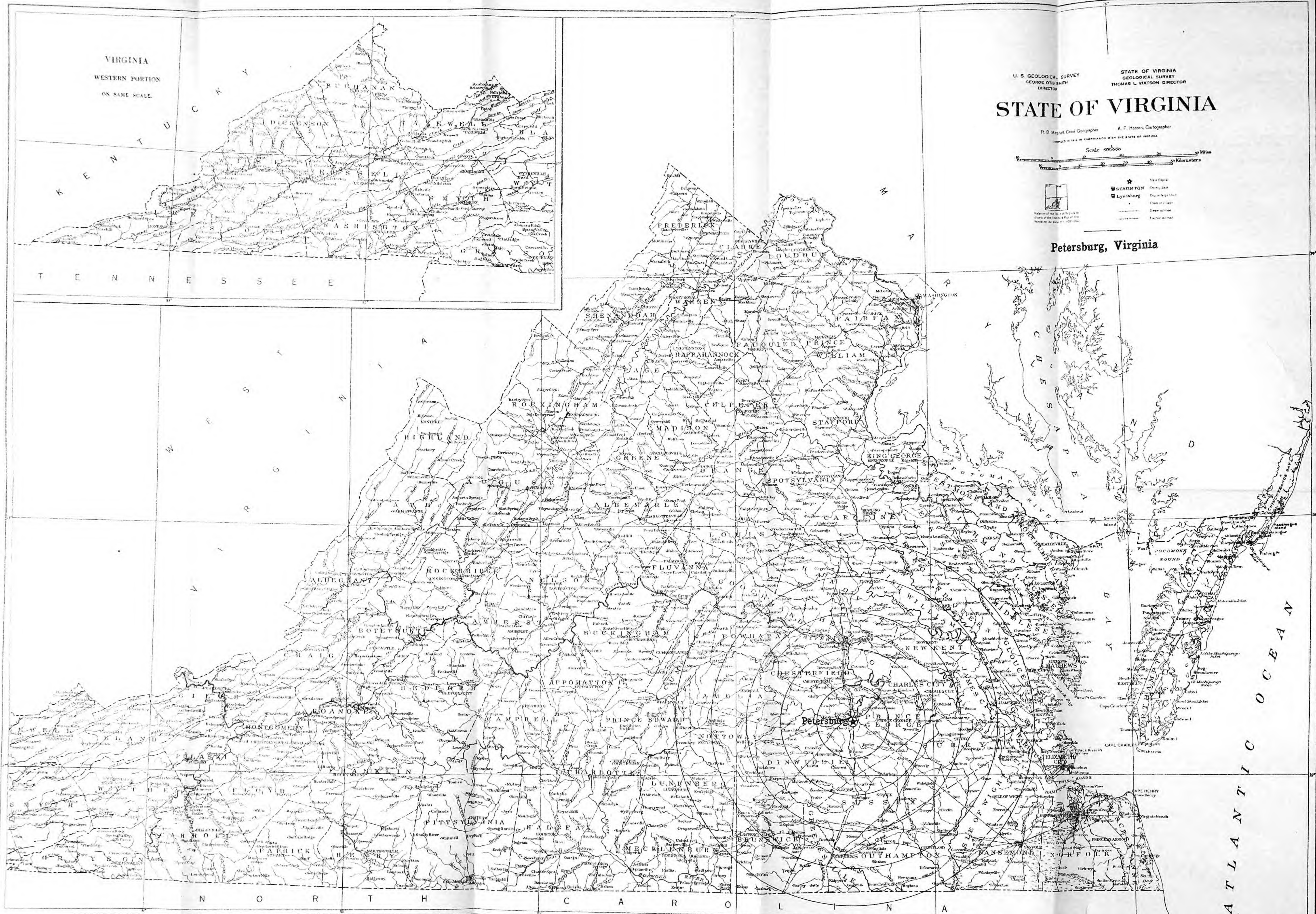
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0 10 20 30 40 Kilometers

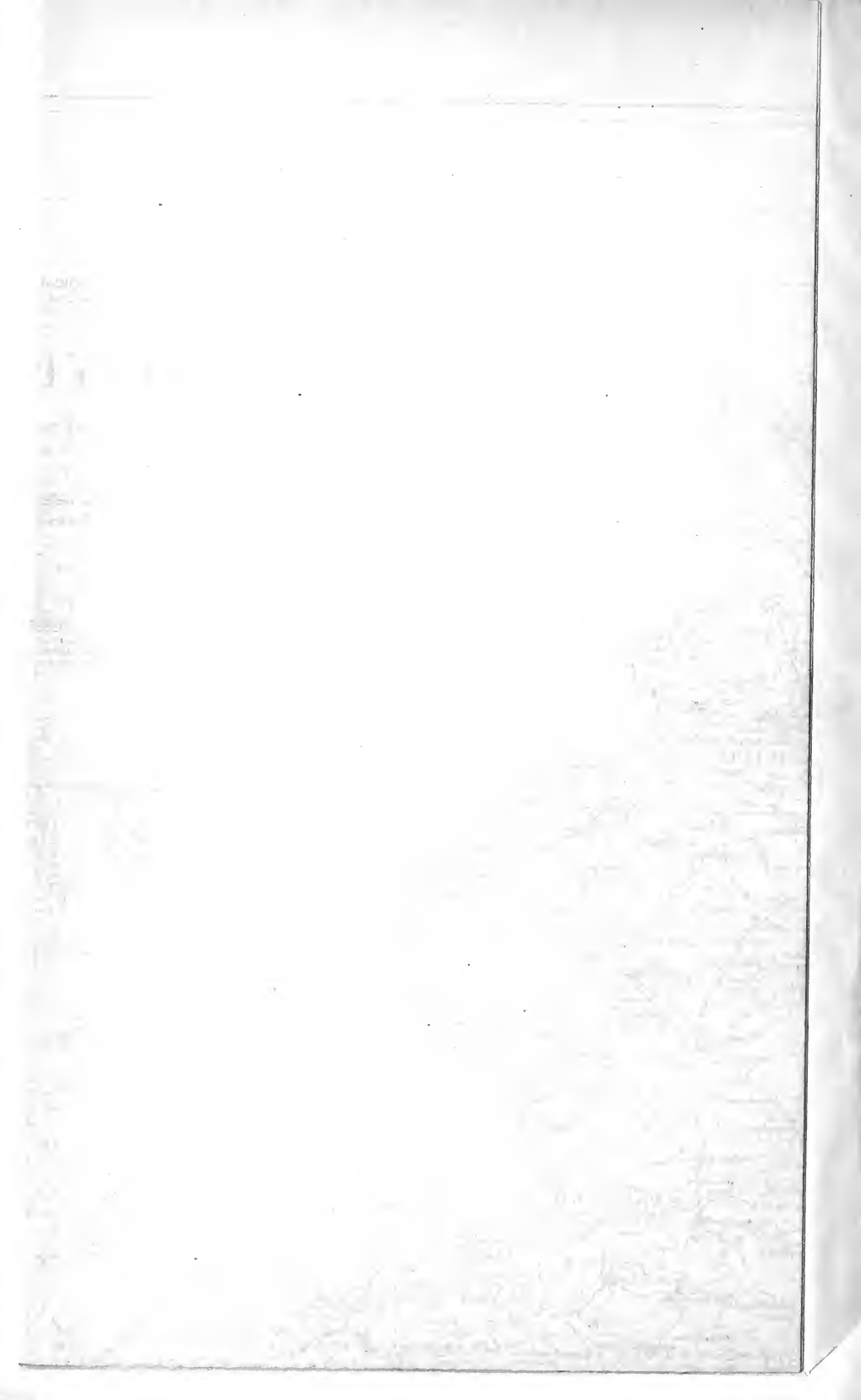


- ★ State Capital
- County Seat
- City or Large Town
- Town or Village
- Stream (natural)
- Electric Railroad

Petersburg, Virginia







## PREFACE

This study of Petersburg, which has been made by Mr. LeRoy Hodges as the director of the department of municipal efficiency and administration of the Bureau of Applied Economics, is both descriptive and analytical. An attempt has been made to give a clear description and inventory of the commercial and industrial resources and forces which have led to the development of the city and its environs. At the same time the general economic or business strength of Petersburg has been weighed in the balance with other localities and an estimate formed in a comparative way of its industrial and commercial advantages. The object has been to furnish a handbook of essential and reliable information to those who wish to study or inform themselves as to the trade, industry, and general business situation of Petersburg. There has been no intention of indulging in the too common present-day practice of setting forth only the attractive facts and conditions in an attractive and oftentimes exaggerated form for the purpose of "boosting." The effort has been to state conservatively and briefly the significant facts without color or bias.

Both original and documentary sources of information have been used. A field investigation covering a period of two months was made into certain conditions for the purpose of compiling facts which were not otherwise available. Statistics and other data which have been collected by the various agencies of the Federal and State and municipal governments have also been drawn upon freely. A considerable proportion of the data collected has also been shown in a graphical way by the use of maps and diagrams in order that its significance may be easily and quickly grasped.

The present survey developed from an original plan of preparing an argument to show the comparative advantages offered by Petersburg for the production of iron and steel products. At a later date this investigation was supplemented by the preparation of a brief, recently submitted to the Federal Farm Loan Board, which set forth the reasons why one of the district farm loan banks should be located at Petersburg. The data thus assembled was finally supplemented by research and original investigation sufficient to present in an extensive way a descriptive inventory and a comparative analysis of Petersburg as a commercial and industrial community.

Time and funds were not available nor was it desired to make an exhaustive and coldly analytical study. Neither was it sought to work out a detailed constructive program for the development of the possibilities of the community. The essential facts have been assembled and analyzed. Conclusions as to the soundness of any constructive enterprise may be examined in the light of these facts. It has also been thought that the study may be put to valuable use in training the young men of the city in a correct knowledge of the commercial and industrial affairs of their own community so that they may intelligently participate in its future development.

W. JETT LAUCK,  
*Director, Bureau of Applied Economics.*

*Washington, D. C.,  
December 27, 1916.*

## ANALYSIS

An analysis of the economic assets of Petersburg and of the Petersburg-Hopewell area of Virginia reveals that the community possesses a number of relative industrial advantages, especially with regard to railroad and water transportation facilities and freight rates, fuel supply, hydro-electric power, accessible raw materials, water supply, domestic and foreign markets, industrial labor supply, climate, local food supply, and banking and credit facilities.

Inducements which Petersburg offers for capital investment also include comparatively low tax rates, first-class fire protection and low insurance rates, available low-priced factory sites, and reasonable building regulations.

The possession of these advantages has made it possible to build up in the community one of the most important export tobacco industries in the United States, a large trunk industry, an important peanut manufacturing business, an extensive woodworking industry, and important textile and leather industries; and induced the duPonts to locate one of the largest munitions plants in the world at Hopewell.

With navigable water, and direct main-line railroad transportation facilities afforded by the Norfolk and Western, Atlantic Coast Line, and the Seaboard Air Line railroads, Petersburg has favorable freight rates from the North; and can secure goods from the West as cheaply as they can be assembled at any point on the Atlantic seaboard. Goods can be distributed to Carolina points as cheaply as from Richmond, and, in a number of cases, more cheaply than from Lynchburg and Roanoke.

On goods marketed in the North, Petersburg has a decided advantage over the North Carolina cities; and to such points as Philadelphia and New York the Peters-

burg rates are the same as from Richmond, and are considerably lower than from Lynchburg, for instance.

Pocahontas and New River coal and coke are delivered f. o. b. sidings at Petersburg, Hopewell or City Point at freight rates of \$1.50 and \$2 per net ton, respectively. Hydro-electric power for industrial purposes can be obtained in large quantities at from one cent to as low as one-third of a cent per kw. h.

Tobacco, peanuts, cotton and lumber are available in the nearby territory with which to supply the local factories; while Petersburg also is strategically located with respect to fuel and the domestic and foreign supplies of iron ores, manganese, nickel and fluxing and other materials required for the development of an extensive iron and steel industry.

Rents, food, and the general cost of living are relatively low; the climatic and natural health conditions are good; industrial fire insurance rates are not high; while local and State taxes are reasonable.

While there is a demand for labor in some of the local factories, experience in the community has been that where adequate wages are offered in conjunction with proper sanitary working and living conditions no difficulty is had in securing plenty of labor in the Petersburg-Hopewell area. The E. I. duPont deNemours and Company, for example, assembled approximately 30,000 men at their Hopewell works within a few months in 1915. In fact, the urban and rural population of Virginia and North Carolina which can be drawn on to supply the labor required in the Petersburg industries is more than sufficient to care for all possible future demands.

Considering, therefore, the economic assets of the community as a whole, the relative advantages of an industrial location in the Petersburg-Hopewell area are exceptional.

## I. PETERSBURG-HOPEWELL INDUSTRIAL AREA

What now may be termed the Petersburg-Hopewell industrial area of Virginia, includes the City of Petersburg and its suburbs, the City of Hopewell near City Point, which is located about 9 miles northeast of Petersburg at the junction of the Appomattox and James rivers, the general territory in the vicinity of Hopewell and City Point, and the territory lying between these communities and Petersburg, south of the Appomattox river, and along the City Point branch of the Norfolk and Western railroad.

The area is divided into two distinct local industrial districts which are known respectively as the "Petersburg district," and the "Hopewell-City Point district." In a general way, these districts may be described separately, although the Petersburg district—or rather the City of Petersburg—must necessarily be used as the basis for any relative or analytical economic study of the area at the present time.

Reference to map 1, between pages 8 and 9, and to map 2, between pages 14 and 15, will enable one readily to grasp the general geographical outlines of the area, and to appreciate its strategic transportation advantages as an industrial center.

### *Petersburg District*

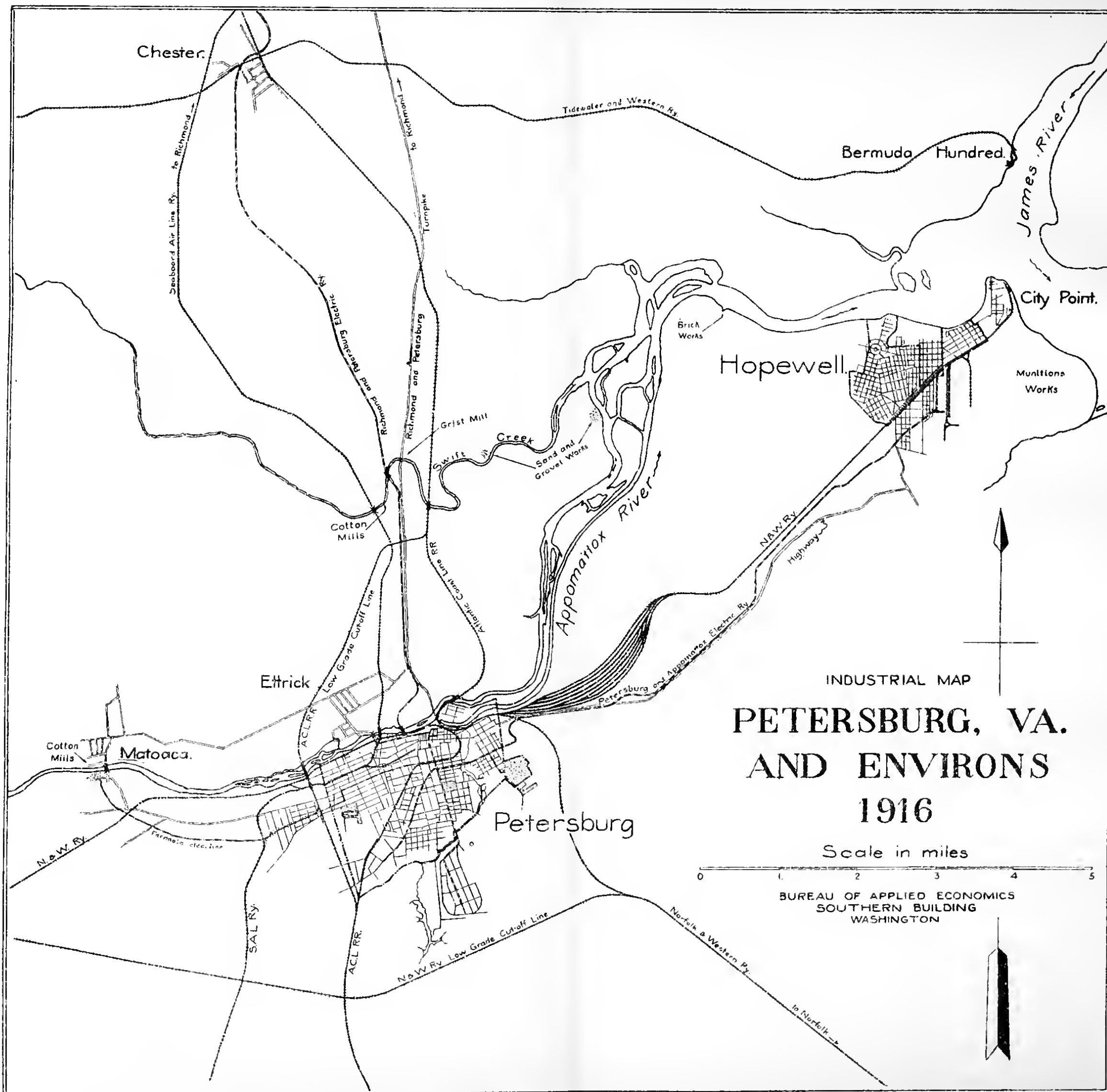
Within the local Petersburg industrial district, which is shown on map 2, are included the City of Petersburg and its subdivisions; the village of Ettrick just across the river; the village of Matoaca on the north side of the Appomattox about 3 miles above the city, where are located the Matoaca cotton mills of the Virginia Consolidated Milling Company; the Swift Creek settlement,

which includes the cotton mills and company village of the Chesterfield Manufacturing Company and the Thompson grist mills; and the properties of the Virginia Sand and Gravel Company located on the north side of the Appomattox about 3 miles below Petersburg.



THE UNIVERSITY OF  
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1901







## II. CITY OF PETERSBURG

The City of Petersburg is located at the head of navigation on the Appomattox—where the tide rises against the foot of the falls of the river—about 12 miles above its confluence with the James at City Point. It possesses the unique commercial and industrial advantage of having adequate water power sufficient for all industrial purposes, deep water navigation to the sea, and unexcelled railroad transportation facilities.

### *Railroad Facilities*

Petersburg is the junction point of the Norfolk and Western Railway, which runs east and west from the Middle Western states through the West Virginia and Virginia coal fields to the Atlantic seaboard at Norfolk; and of the Atlantic Coast Line and the Seaboard Air Line railroads, which provide the community with direct north and south trunk-line connections to the principal cities of the Eastern, Northern, Southeastern and Gulf States. By virtue of these north and south trunk lines, Petersburg also possesses the additional east and west railroad facilities afforded by the Chesapeake and Ohio Railway at Richmond; and of the Virginian Railway at Alberta, 38 miles south on the Seaboard Air Line, and at Jarratt, 30 miles south on the Atlantic Coast Line. These connections are especially valuable in that they make available to the Petersburg-Hopewell area the combined Pocahontas and New River coal deposits along the Norfolk and Western, Chesapeake and Ohio, and Virginian railroads. Map 3, between pages 16 and 17, shows the general railroad facilities at Petersburg in 1916.

Within a radius of less than 50 miles the railroads operating directly through Petersburg connect with the Southern Railway on the north at Richmond, on the

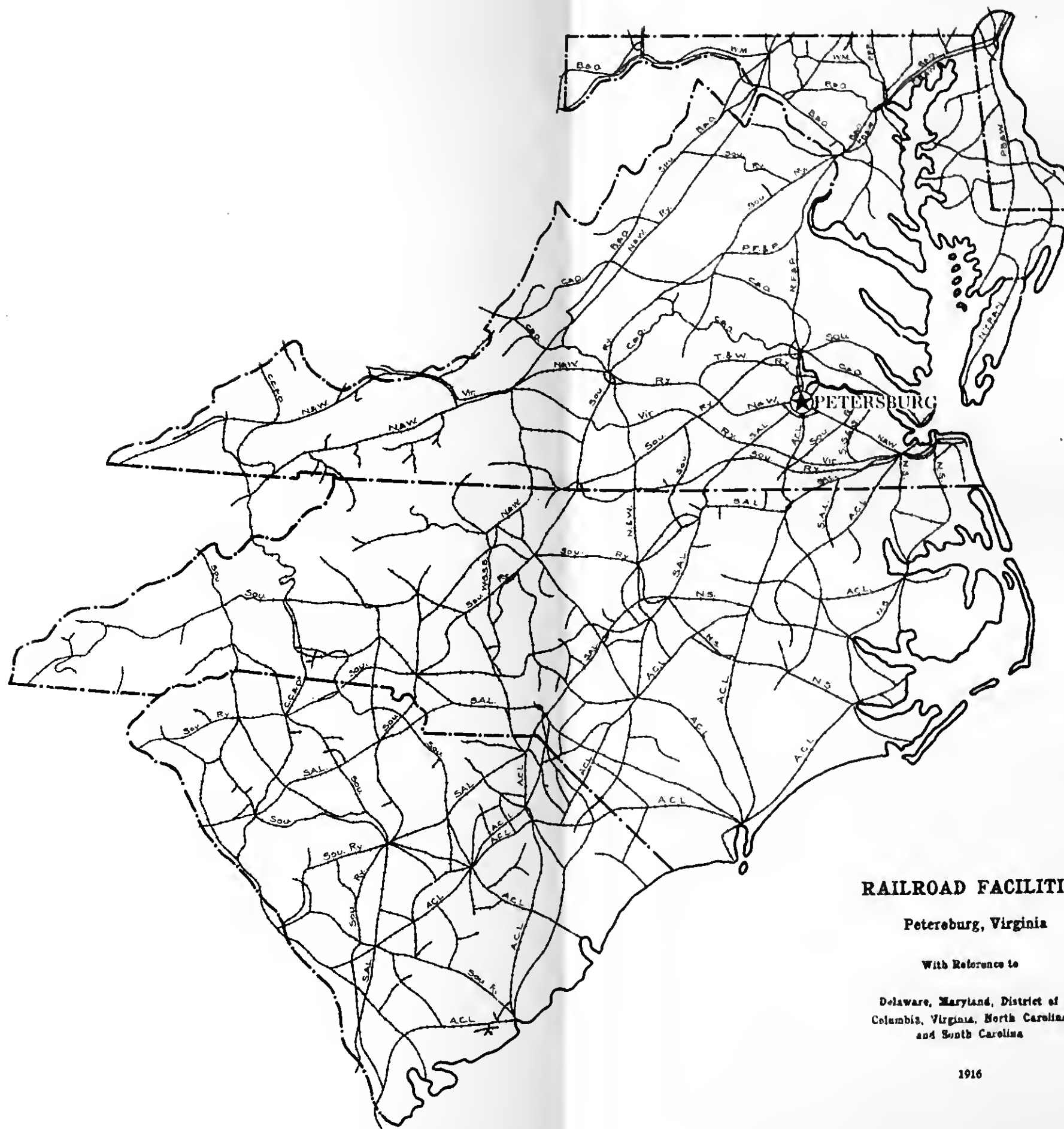
south at Emporia, on the east at Waverly, and on the west at Burkeville. Actually, therefore, the Petersburg-Hopewell area is served by all three of the great north and south trunk line railroads operating along the Atlantic seaboard, namely, the Atlantic Coast Line, the Seaboard Air Line, and the Southern; possesses the combined east and west railroad transportation facilities afforded by the Norfolk and Western Railway, the Chesapeake and Ohio Railway, and the Virginian Railway—the three most important deepwater terminal coal roads in the United States. Map 4, between pages 18 and 19, shows in detail the railroad facilities of the territory within a radius of 50 miles of Petersburg.

#### *Location*

The geographical location of Petersburg with the shortest distance by railroad and first-class mail time to the principal cities of the United States,<sup>1</sup> east of the Mississippi river, is shown on map 5, between pages 20 and 21; while the distances and time are summarized in the following table:







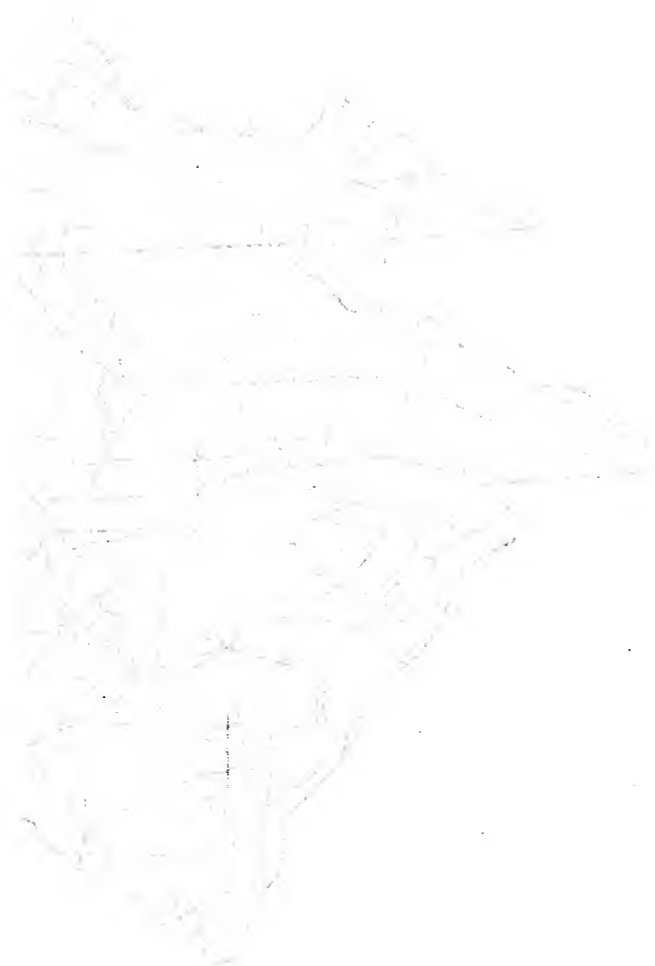
## RAILROAD FACILITIES

Petersburg, Virginia

With Reference to

Delaware, Maryland, District of  
Columbia, Virginia, North Carolina  
and South Carolina

1916



## CITY OF PETERSBURG

17

TABLE 1.—Shortest railroad distance and first-class mail time between Petersburg and thirty specified cities in the United States east of the Mississippi river\*

	Shortest distance by railroad	First-class mail time	
	Miles	Hours	Minutes
<i>From Petersburg to—</i>			
Richmond, Va.....	23	..	33
Norfolk, Va.....	82	2	10
Washington, D. C.....	138	4	20
Baltimore, Md.....	178	5	32
Wilmington, N. C.....	223	8	20
Philadelphia, Pa.....	273	7	40
Charlotte, N. C.....	280	11	..
New York, N. Y.....	365	9	40
Charleston, S. C.....	374	10	49
Pittsburgh, Pa.....	440	14	05
Savannah, Ga.....	479	13	22
Atlanta, Ga.....	556	16	37
Chattanooga, Tenn.....	567	20	25
Cleveland, Ohio.....	571	17	35
Buffalo, N. Y.....	574	18	..
Boston, Mass.....	577	16	22
Cincinnati, Ohio.....	602	16	10
Jacksonville, Fla.....	618	17	52
Louisville, Ky.....	665	24	40
Nashville, Tenn.....	718	28	10
Birmingham, Ala.....	722	21	57
Detroit, Mich.....	759	25	30
Memphis, Tenn.....	880	34	40
Mobile, Ala.....	906	26	52
Chicago, Ill.....	907	25	15
St. Louis, Mo.....	941	25	10
Milwaukee, Wis.....	992	28	40
New Orleans, La.....	1,046	31	07
Minneapolis, Minn.....	1,329	37	12
Duluth, Minn.....	1,470	43	..

\*Figures furnished by Superintendent, Third Division, United States Railway Mail Service.

Map 6, between pages 22 and 23, shows the shortest railroad distance and first-class mail time between Petersburg and specified cities and towns in Delaware, Maryland, District of Columbia, Virginia, North Carolina and South Carolina. The distances and time from Petersburg to these points are summarized in the following table:

TABLE 2.—*Shortest railroad distance and first-class mail time between Petersburg and specified cities and towns in Delaware, Maryland, District of Columbia, Virginia, North Carolina and South Carolina\**

<i>From Petersburg to—</i>	<i>Shortest distance by railroad</i>	<i>First-class mail time</i>	
	<i>Miles</i>	<i>Hours</i>	<i>Minutes</i>
Delaware:			
Dover.....	312	12	03
Wilmington.....	247	7	02
Maryland:			
Annapolis.....	203	8	30
Baltimore.....	178	5	32
Cumberland.....	288	9	05
Frederick.....	193	6	10
Hagerstown.....	215	7	05
Salisbury.....	350	14	52
District of Columbia:			
Washington.....	138	4	20
Virginia:			
Bristol.....	327	10	50
Charlottesville.....	119	3	55
Danville.....	138	5	15
Emporia.....	41	1	08
Fredericksburg.....	83	2	45
Lynchburg.....	122	3	40
Norfolk.....	82	2	10
Richmond.....	23	..	33
Roanoke.....	176	5	25
Staunton.....	158	9	18
Suffolk.....	59	1	30
Winchester.....	226	7	09
North Carolina:			
Asheville.....	377	15	03
Charlotte.....	280	11	..
Durham.....	132	3	30
Edenton.....	156	5	45
Fayetteville.....	189	4	24
Goldsboro.....	139	4	25
Greensboro.....	186	7	33
Newbern.....	197	6	55
Raleigh.....	135	3	47
Washington.....	138	10	35
Wilmington.....	223	8	20
Winston-Salem.....	214	9	25
South Carolina:			
Aiken.....	408	19	30
Beaufort.....	463	16	29
Charleston.....	374	10	49
Columbia.....	337	10	01
Denmark.....	389	11	04
Florence.....	272	6	52
Georgetown.....	356	15	..
Greenville.....	387	14	28
Orangeburg.....	355	9	06
Sumter.....	311	8	14

\*Figures furnished by Superintendent, Third Division, United States Railway Mail Service.





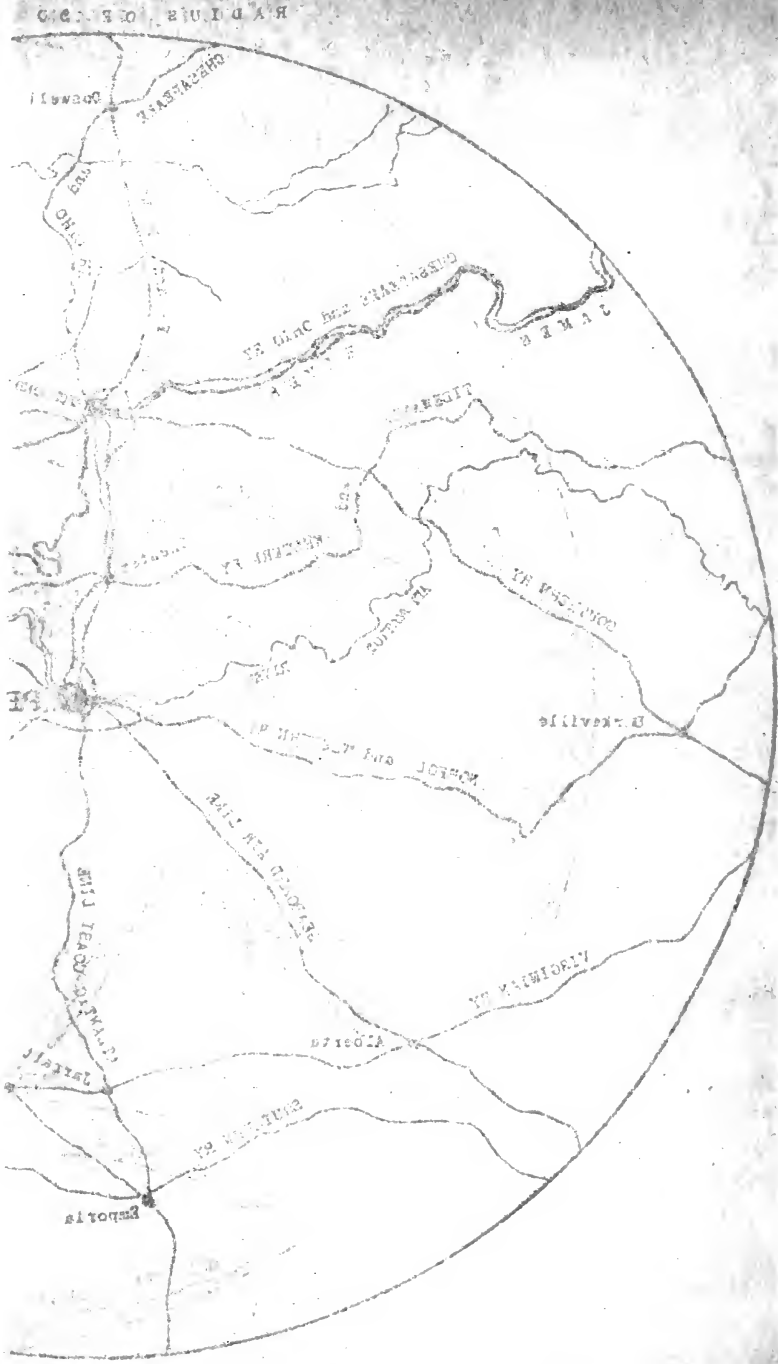
RADIUS OF 50 MILES



RAILROAD MAP OF PETERSBURG, VIRGINIA: 1916

BUREAU OF APPLIED ECONOMICS  
Southern Bldg., Washington

THE HARRIS PETERS CO., WASHINGTON, D. C.



RAILROAD MAP OF THE WESTERN UNITED STATES

Published by the  
 GEOGRAPHICAL INSTITUTE OF AMERICA  
 100 N. 3rd St. St. Louis, Mo.

281  
 345

*Water Transportation*

Petersburg also possesses direct deep water transportation facilities to Chesapeake bay points and to the Atlantic ocean. Map 7, between pages 24 and 25, prepared after the United States Coast and Geodetic Survey, shows the Appomattox channel from Petersburg to City Point and the channel of the James from City Point to Chesapeake bay. This map was issued in July, 1916, and shows a clear minimum channel depth of 20 feet from City Point to the sea.

Under normal conditions, the Petersburg harbor has a minimum width of 80 feet, and a depth of 12 feet, with a mean tidal variation between high and low water of about 3 feet; while the Appomattox channel to City Point has a minimum mean low tide depth of 12 feet. At present, however, this depth is not available, due to a break in the diversion head which has admitted sand with the up-river flood waters. Plans for the immediate restoration of the Appomattox channel to a depth of 12 feet, which include the construction of a new diversion dam and the dredging of the harbor, have been approved by the Federal government.

At present, the Furman Line and the Merchants' Line each operates a daily round-trip steamboat service between Petersburg and Richmond, connecting at City Point with steamers of the Virginia Navigation Company (Old Dominion Line) to Newport News and Norfolk. Shipments by water to Petersburg usually come via the Old Dominion Line to City Point where they are received by the Norfolk and Western Railway, by which deliveries are made at Petersburg. The possession of these water transportation facilities insures relatively low railroad freight rates at Petersburg.

*History of Petersburg*

Petersburg traces its history back to 1612, when it was included in Smith's map of Virginia under the name of "Appomattuck."<sup>1</sup> In 1645 old Fort Henry was erected at the falls of the Appomattox, within the site of the present city, to guard the headwaters of the river against the incursions of the Indians. Its present name is derived from Peter Jones, who maintained an early Indian trading post here near the river. It was first called "Peter's Point," and later "Petersburg" by Colonel William Byrd when he laid off the permanent community in 1733. Petersburg was first incorporated in 1784.

In an address in which he thanked the Petersburg troops for their services in the War of 1812, President Madison dubbed the community "The Cockade City of the Union"—a title by which Petersburg is familiarly known today.

*Population*

In 1910 the population of Petersburg was reported by the Federal census at 24,127—an increase of 10.6 per cent over the population of 1900. On July 1, 1914, just before the European war broke out, the estimated population of the city was 25,000, and that of the whole Petersburg-Hopewell area about 26,500. A conservative estimate on July 1, 1916, gave the city a population of from 30,000 to 35,000, and the entire area a total population of from 50,000 to 60,000.

This abnormal increase in the population between the summer of 1914 and July 1, 1916, was caused by the establishment of the Hopewell munitions works of the

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<sup>1</sup>"Three Centuries of an Old Virginia Town," by Arthur Kyle Davis (1914), p. 1.



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# Geographical Location

## Petersburg, Virginia

Showing Distance by Railroad and

First-Class Mail Time

To Thirty Important Cities

1916



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<sup>1'</sup>  
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E. I. duPont deNemours and Company at City Point. Prior to the erection of these works, the population of the Hopewell-City Point district was hardly more than 500, all told. On July 1, 1916, however, its population was estimated at between 20,000 and 25,000.

The combined population, in 1910, of Petersburg and of the twelve Virginia counties, commonly known as the "Southside" counties, which compose Petersburg's local trade territory,<sup>2</sup> was 201,413. This population was apportioned among the several counties as follows:<sup>3</sup>

<i>County</i>	<i>Population</i>
Amelia .....	8,720
Brunswick .....	19,244
Chesterfield .....	21,299
Dinwiddie .....	15,442
Greensville .....	11,890
Lunenburg .....	12,780
Mecklenburg .....	28,956
Nottoway .....	13,462
Prince Edward .....	14,266
Prince George .....	7,848
Surry .....	9,715
Sussex .....	13,664
	<hr/>
	177,286
City of Petersburg.....	24,127
	<hr/>
Total .....	201,413

On July 1, 1916, the total estimated population in this territory was 250,000.

A study of Petersburg's population in 1910, shows that 54.4 per cent were white, of whom 1.6 per cent were foreign-born. The number of whites in the city increased during the decade 1900-1910 more than 26 per cent, while the negro population decreased between 1890 and

<sup>2</sup>See map 16, p. 110.

<sup>3</sup>Compiled from "Thirteenth Census of the United States," Vol. III, pp. 936-961.

1910 more than 10 per cent. The number of females was greater among both the white and colored populations than the number of males; while the number of white males of voting age exceeded the number of adult negro males by more than 1,200.

The total number of persons engaged in manufactures in Petersburg in 1910 was 4,332, while the total estimated number of persons industrially employed in the Petersburg-Hopewell area on July 1, 1916, was between 18,000 and 20,000, or about 40 per cent of the total population. During the year 1915, and the early part of 1916, while the Hopewell works were under construction, it is estimated that approximately 30,000 men were employed in the local Hopewell-City Point district.

With the exception of Chesterfield county, which lies between Petersburg and Richmond, the rural population about Petersburg is composed largely of negroes, who supply the labor required in the extensive farming operations carried on in the Southside counties. There are also more than 3,000 Bohemian and Slovak farmers living in these counties—chiefly in the counties of Prince George, Dinwiddie and Chesterfield, within a radius of 20 miles of Petersburg. About 15 per cent of the rural population of Prince George county (exclusive of the Hopewell-City Point district) is composed of Bohemians and Slovaks. About 90 per cent of these Slavish farmers are proprietors operating their own farms.

### *Manufactures*

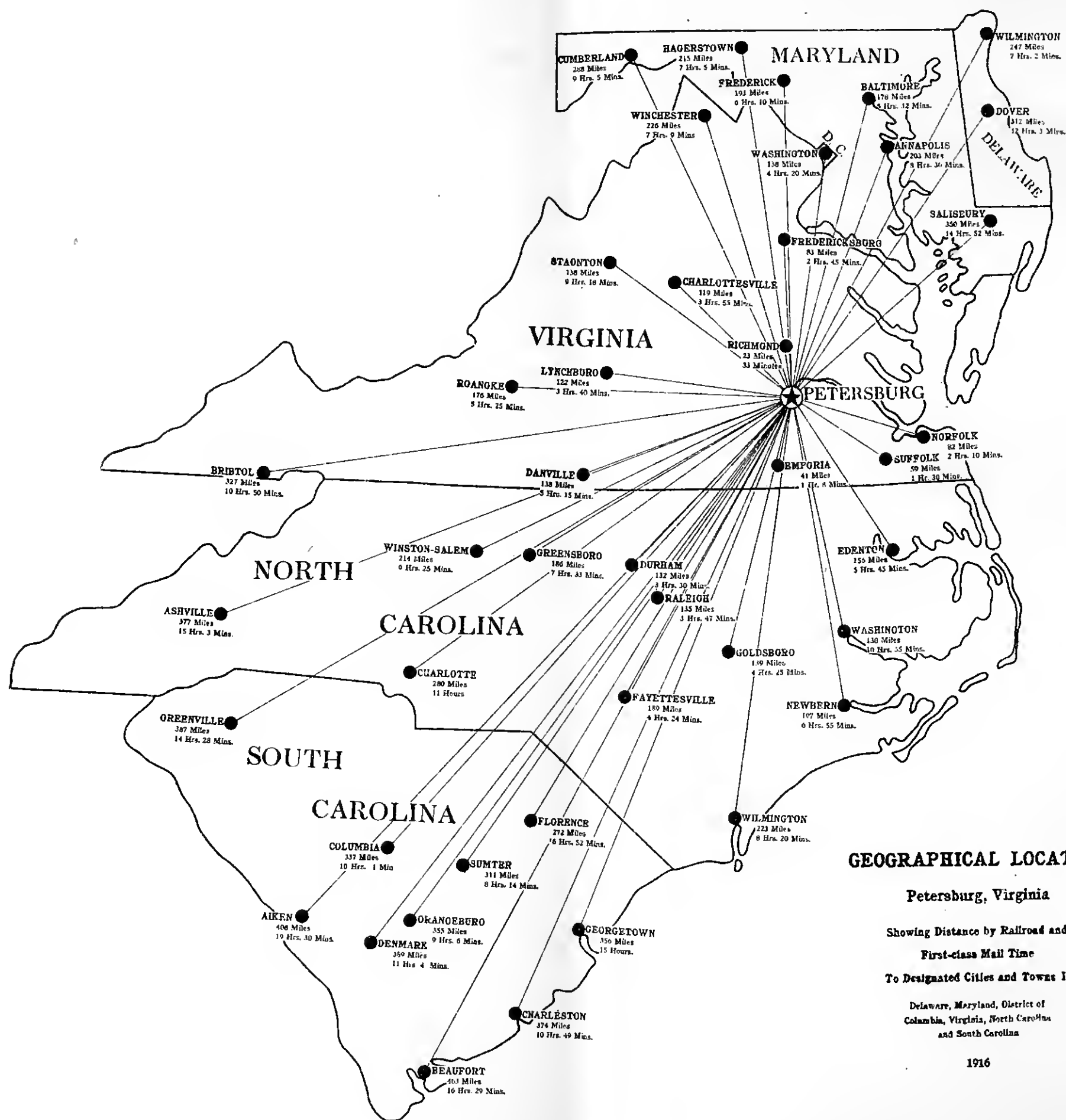
Petersburg is an important center for the manufacture of tobacco, peanuts, trunks and valises, and lumber and timber products. In addition to these four primary industries, the city's secondary industries (exclusive of a number of small miscellaneous industries) include establishments making cotton goods and yarns, silk throw-



# GEOPHYSICAL LOCATION

Geophysical location  
 of the Hawaiian Islands  
 in the Pacific Ocean  
 is shown in the following  
 diagram.





## GEOGRAPHICAL LOCATION

### Petersburg, Virginia

Showing Distance by Railroad and  
First-class Mail Time  
To Designated Cities and Towns in

Delaware, Maryland, District of  
Columbia, Virginia, North Carolina  
and South Carolina

1916



sters, machinery, fertilizers, fireworks, trousers, finished and retanned leather, straw hats, grist mill products, and books and printed matter.

In 1914, the Federal census of manufactures enumerated 87 manufacturing establishments within the city limits. The establishments were classified as follows:<sup>4</sup>

<i>Industry</i>	<i>Number of establishments</i>
Agricultural implements .....	1
Boxes, wooden packing.....	1
Bread and other bakery products.....	7
Butter, cheese and condensed milk.....	1
Carriage and wagon materials.....	1
Carriages and wagons.....	3
Clothing, men's.....	1
Confectionery and ice-cream.....	7
Cooperage .....	1
Cotton goods .....	1
Fertilizers .....	3
Fireworks .....	1
Flavoring extracts .....	1
Flour-mill and grist-mill products.....	2
Foundry and machine-shop products.....	3
Gas, illuminating and heating.....	1
Hats, straw .....	2
Ice, manufactured .....	2
Leather, tanned, curried and finished.....	1
Liquors, distilled .....	1
Lumber, planing-mill products.....	7
Mattresses and spring beds.....	2
Mineral and soda waters.....	5
Monuments and tombstones.....	1
Optical goods .....	1
Peanuts, grading, roasting, cleaning and shelling..	5
Printing and publishing, book and job.....	3
Printing and publishing, newspapers and periodicals.	5
Saddlery and harness.....	2
Silk goods, including throwsters.....	1
Tobacco, chewing, smoking and snuff.....	1
Tobacco, cigars and cigarettes.....	3

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<sup>4</sup>List was supplied by the United States Bureau of the Census on special request.

Tools, not elsewhere specified.....	1
Trunks and valises.....	7
Upholstering materials .....	1
Wood, turned and carved.....	1
Total .....	87

The combined 1914 statistics for these establishments, according to the preliminary report of the United States Bureau of the Census, issued in April, 1916, are as follows:

Number of establishments.....	87
Persons engaged in manufactures.....	4,320
Proprietors and firm members.....	63
Salaried employes .....	354
Wage earners (average number).....	3,903
Primary horsepower .....	6,549
Capital .....	\$ 6,497,000
Services .....	1,799,000
Salaries .....	407,000
Wages .....	1,392,000
Materials .....	8,393,000
Value of products.....	12,610,000

Comparing these figures with those for the Petersburg industries in 1909, as returned by the Thirteenth Census of the United States, the amount of capital invested shows an increase of more than 24 per cent during the five years 1909-1914. The total annual outlay in wages increased about 26 per cent during this period, and the cost of the materials used about 46 per cent; while the annual value of the city's manufactured products was increased from \$8,896,000 in 1909 to \$12,610,000 in 1910—an increase of nearly 42 per cent. These gains were made in spite of the fact that the 1914 Federal census of manufactures covers a period during which the local industries at Petersburg were more or less demoralized by the outbreak of the European war.

#### *Trading Area*

In addition to its manufacturing enterprises, Petersburg is an important trading center. It is the wholesale

General Physical Location

Gettysburg, Virginia

1871



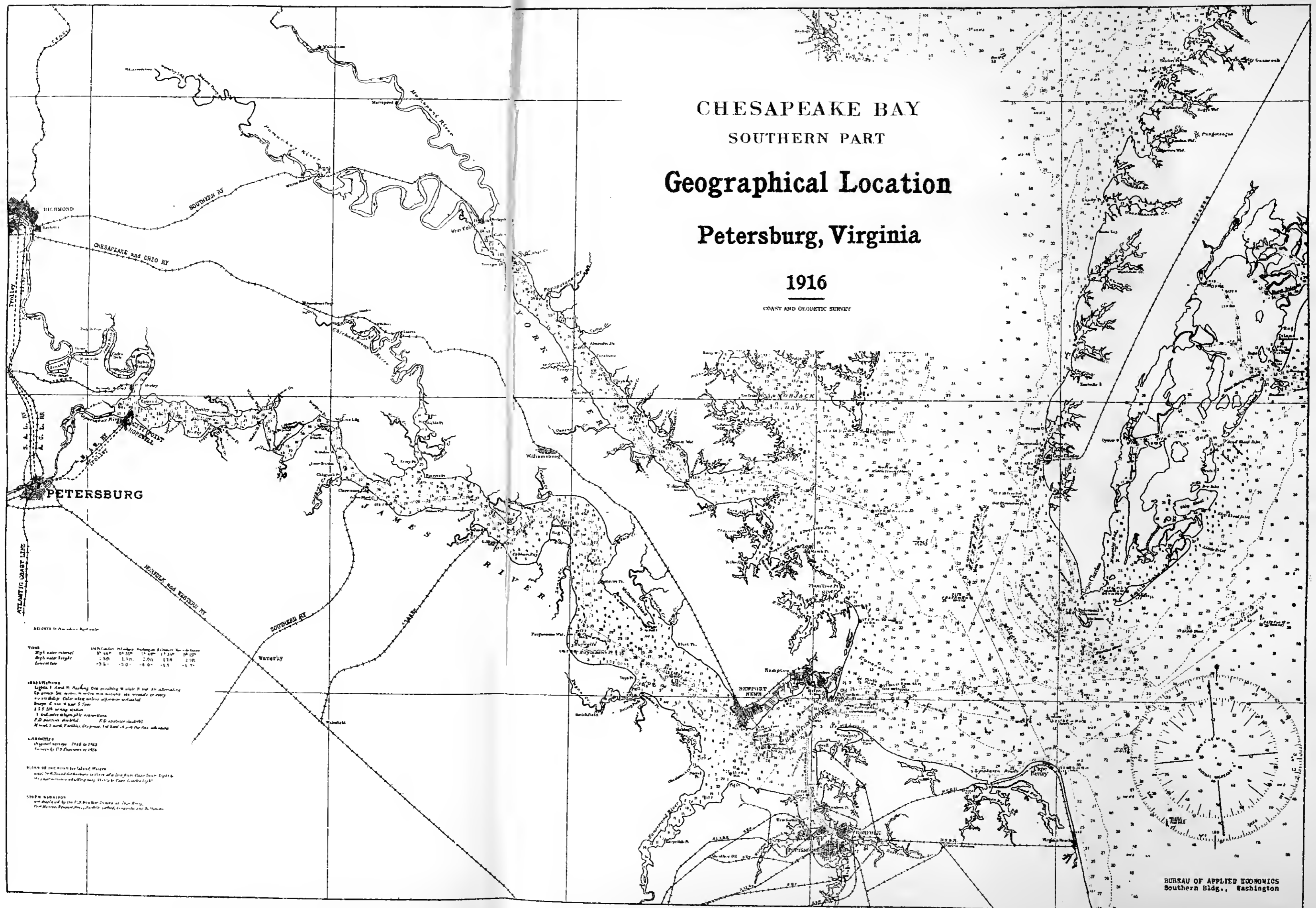
CHESAPEAKE BAY  
SOUTHERN PART

**Geographical Location**

**Petersburg, Virginia**

1916

COAST AND GEODETIC SURVEY

BUREAU OF APPLIED ECONOMICS  
Southern Bldg., Washington



and retail purchasing point for the approximately 250,000 people in the twelve Southside Virginia counties, and an important distributing point for the communities in central and eastern North Carolina and north-eastern South Carolina.<sup>5</sup> Petersburg's wholesale and distributing business in this territory averages about \$10,000,000 a year.

### *Value of Crops*

The combined annual value of all crops now produced in the twelve Southside Virginia counties, included in the Petersburg local trade territory, is about \$15,000,000;<sup>6</sup> which, together with a valuable timber production, is indicative of their purchasing power. Tobacco, corn, peanuts, vegetables and hay are the leading agricultural products in these counties.

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<sup>5</sup>See map 15, p. 101.

<sup>6</sup>The value reported by the Thirteenth Census of the United States was \$12,773,067. See table 26, p. 109; and map 16, p. 110.

### III. HOPEWELL-CITY POINT DISTRICT

City Point, the original settlement in the Hopewell-City Point district, is located at the mouth of the Appomattox river on the south side of the James, in Prince George county, about nine miles northeast of Petersburg. The James river affords water transportation upstream to Richmond, and downstream to Chesapeake bay; while the Appomattox river provides water transportation to Petersburg.<sup>7</sup>

Two steamboat lines operate a daily schedule between Petersburg, City Point and Richmond; while the Virginia Navigation Company (Old Dominion Line) operates a daily service up the James to Richmond via City Point from Norfolk and Newport News. The Norfolk and Western Railway's double-track, heavy-traffic line between City Point, Hopewell and Petersburg is one of the company's most important tonnage feeders. Hopewell and City Point are also connected with Petersburg by a trolley line and a modern concrete highway. At Bermuda Hundred, located just across the mouth of the Appomattox, is the terminus of the Tidewater and Western Railway, which runs from Farmville, in central Virginia, through the local Chesterfield coal area to deep water at Bermuda Hundred.

#### *Munitions Industry*

Here at City Point are located the mammoth gun-cotton and nitric and sulphuric acid works of the E. I. duPont deNemours and Company, established as a result of the European war.

The first unit of these works was a dynamite plant projected in 1912. In April of this year, the duPont

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<sup>7</sup>See map 7, between pp. 24 and 25.

Company, having been attracted to the Petersburg-Hopewell area by virtue of its excellent rail and deep-water transportation facilities and favorable railroad rates, purchased about 1,800 acres of land, at an average price of \$20 per acre, near City Point. At a distance of about a mile and half back of City Point, on the Norfolk and Western's Petersburg-City Point branch, the company began the erection of a small dynamite plant. The property on which this plant was erected had formed a part of the old "Hopewell" estate of the Eppes family, and the duPont Company accordingly designated the new establishment as its "Hopewell works."

This plant was hardly completed, and had not been actually in operation, when the European war broke out in the summer of 1914. As the war immediately destroyed the commercial demand for dynamite, the establishment was hurriedly converted into a gun-cotton plant to supply the European demand for artillery ammunition. Unit after unit was added to the plant as the war demands increased, until today the Hopewell works are among the largest munitions plants in the world.

On July 1, 1916, these works employed more than 13,500 persons, and in the latter part of October increased the number to about 18,000. Their average monthly payroll during the half-year ending June 30, 1916, was roughly \$1,000,000. The average daily consumption of raw cotton during this period was between 500,000 and 750,000 pounds, while approximately 150,000 tons of imported Chilean nitrates were consumed. During this same period, as well as during the latter part of 1915, the works consumed an average of from 40 to 50 cars of coal a day—an average daily coal consumption of between 2,000 and 3,000 tons. The maximum daily coal

consumption during this period averaged from 4,000 to 5,000 tons.

The works are operated by their own power. The steam equipment is capable of producing from 60,000 to 70,000 horsepower and of generating about 30,000 electrical horsepower. The company's water system has a daily capacity of about 40,000,000 gallons. Water is derived principally from the Appomattox river and purified by a combined coagulation, filtration and chemical sterilization process before being used in the manufacturing operations.

The estimated population in the Hopewell-City Point district on July 1, 1916, was 20,000 to 25,000.

### *History of City Point*

In view of this phenomenal industrial development that has taken place around City Point, a brief account of its history is of interest.

The place was established more than 300 years ago by Sir Thomas Dale in December, 1613, under the name of Bermuda City. Before the establishment of the duPont works, the normal population of the community, even in its most prosperous days, had not exceeded 500. In 1619 it became the capital of Charles City Corporation under the name of Charles City, and in 1621 was selected as the site of the East India school. This school was destroyed and the students massacred in the Indian raids of the following year which wiped out the James river settlements.

In 1702 that part of Charles City county lying on the south side of the James river was formed into the county of Prince George, and the name of Charles City subsequently gave way to that of "City Point," in which manner the place is mentioned in the records of Prince George county in 1720.

It was here at City Point that the British landed on April 24, 1781, and captured Petersburg. During the Civil War, General Grant made City Point his headquarters for eight months during the campaigns of 1864-5 against Petersburg and Richmond.

Destroyed in the early Indian wars, burned by the British in the Revolution, seized and used as a base by the Federals in the Civil War, and transformed into one of the nation's important industrial centers by the European war of 1914, City Point has played a conspicuous part in the history of this country.

#### IV. CITY OF HOPEWELL

When Europe plunged into war in the summer of 1914, the site of what is now the incorporated city of Hopewell was a peaceful cornfield about a mile back from City Point, along what was then a neglected branch of the Norfolk and Western railroad to Petersburg.

The new city had its beginning on April 13, 1915, when the owners of the property facing the entrance to the duPont works offered it for sale at auction as "town lots." One of the most remarkable booms in the history of the United States followed. Lots that were bought on the day of this sale at from \$40 to \$500 were changing hands a few months later at prices ranging from \$3,000 to \$20,000 apiece.

Buildings of all kinds and descriptions were erected overnight, and in an incredibly short time the old cornfield was transformed into a bustling industrial community. On December 9, 1915, the heart of this new city was swept by a fire which destroyed a half-million dollars' worth of property. The chaos produced by this conflagration caused the governor of Virginia to place the community under semi-military control in order to relieve the county officials of the heavy burden of maintaining order until the State legislature could provide a special local government.

##### *Government*

Under an act of February 26, 1916, the militia was relieved of further duty, and the government of Hopewell, exclusive of City Point, which was left a part of Bland magisterial district of Prince George county, was temporarily vested in an "administrative board," composed of five citizens appointed by the governor to serve until July 1, 1916. Under another act of the legislature,

approved on the same day, and effective July 1, 1916, the Hopewell area was incorporated as a city of the first class and its government vested in a mayor and a bicameral council.

In view of the fact that Hopewell became a city before a sufficient number of its citizens had resided in the community long enough to qualify as voters under the Virginia suffrage laws, the act of incorporation provided that the governor should appoint the mayor and members of the council to serve until their successors are elected on later specified dates. The other elective city officials were appointed by the council, also to serve until their successors are elected later at designated elections.

The following diagram shows the general organization of the city government of Hopewell as authorized under the provisions of the act of the General Assembly of Virginia of February 26, 1916.



*Housing Facilities*

On May 1, 1916, there were 1,076 buildings in Hopewell and vicinity, exclusive of the duPont villages, and 167 at City Point, with a combined value of about \$1,500,000. Of these buildings, 577 were used primarily as dwellings. Frame and metal-covered frame construction predominated. Ninety-three brick buildings were reported on this date, of which 69 were located in the business section of Hopewell, replacing, in many instances, frame buildings destroyed in the fire of December 9, 1915.

In addition to these buildings, there are more than 1,600 company cottages, bungalows and family apartment buildings located in the duPont villages outside of the works, and 230 bunk-houses inside the enclosure, having a combined value of about \$1,800,000. The number of persons housed in company dwellings on July 1, 1916, was 15,305, or about 75 per cent of the total combined population of the Hopewell-City Point area.

*Water Supply*

Hopewell already has a good sewerage system; while its present water supply is derived from driven wells of a depth of about 120 feet. The daily capacity of the present water system, which is controlled by private interests, is about 300,000 gallons. In addition to this, one of the Hopewell subdivisions has an independent water system which includes a tank reservoir of 100,000 gallons' capacity.

As a special precaution against another fire, the Hopewell city mains have been connected with the fire mains of the duPont works, which have a capacity of about 2,000 gallons per minute under 125-pound pressure.

*Electric Power*

Electric current for lighting and domestic power purposes is furnished in Hopewell by the Petersburg and Appomattox Railway Company, which in turn purchases its power from the Virginia Railway and Power Company at Petersburg. The duPont villages, as well as the company's detached houses, are furnished with electricity from the works.

*Civic Progress*

Rapid progress is being made in the improvement of streets and sidewalks in the city, and as soon as the new government is thoroughly organized general civic conditions can be greatly improved.

## V. CLASSIFICATION OF PETERSBURG INDUSTRIES

Petersburg, as has been stated, is one of the most important tobacco, peanut and trunk manufacturing centers in the United States. It also has important wood-working establishments. These four primary industries are supplemented with ten important secondary industries, and more than twenty other small miscellaneous industries.

The secondary industries include establishments manufacturing books and printed matter, cotton goods and yarns, fertilizers, fireworks, foundry and machine-shop products, grist-mill products, leather, trousers, silk throwsters, and straw hats.

The miscellaneous group includes establishments manufacturing agricultural implements, bakery products, brick and tile, brooms, butter, carriages and wagons and their materials, confectionery and ice-cream, electricity for power and lighting, flavoring extracts, gas for illuminating and heating, ice, liquors, mattresses, mineral and soda waters, monuments and tombstones, optical goods, patent medicines, pens (fountain), saddlery and harness, steam laundrying, tools (electric), and upholstering materials. Extensive sand and gravel excavating also is carried on in the immediate vicinity of Petersburg.

Map 8, between pages 36 and 37, shows the general grouping of the primary and secondary industrial establishments in Petersburg and the excellent intra-city railroad transportation facilities which they possess. An inspection of this map reveals that the main lines of the Norfolk and Western, the Atlantic Coast Line and of the Seaboard Air Line railroads pass directly through

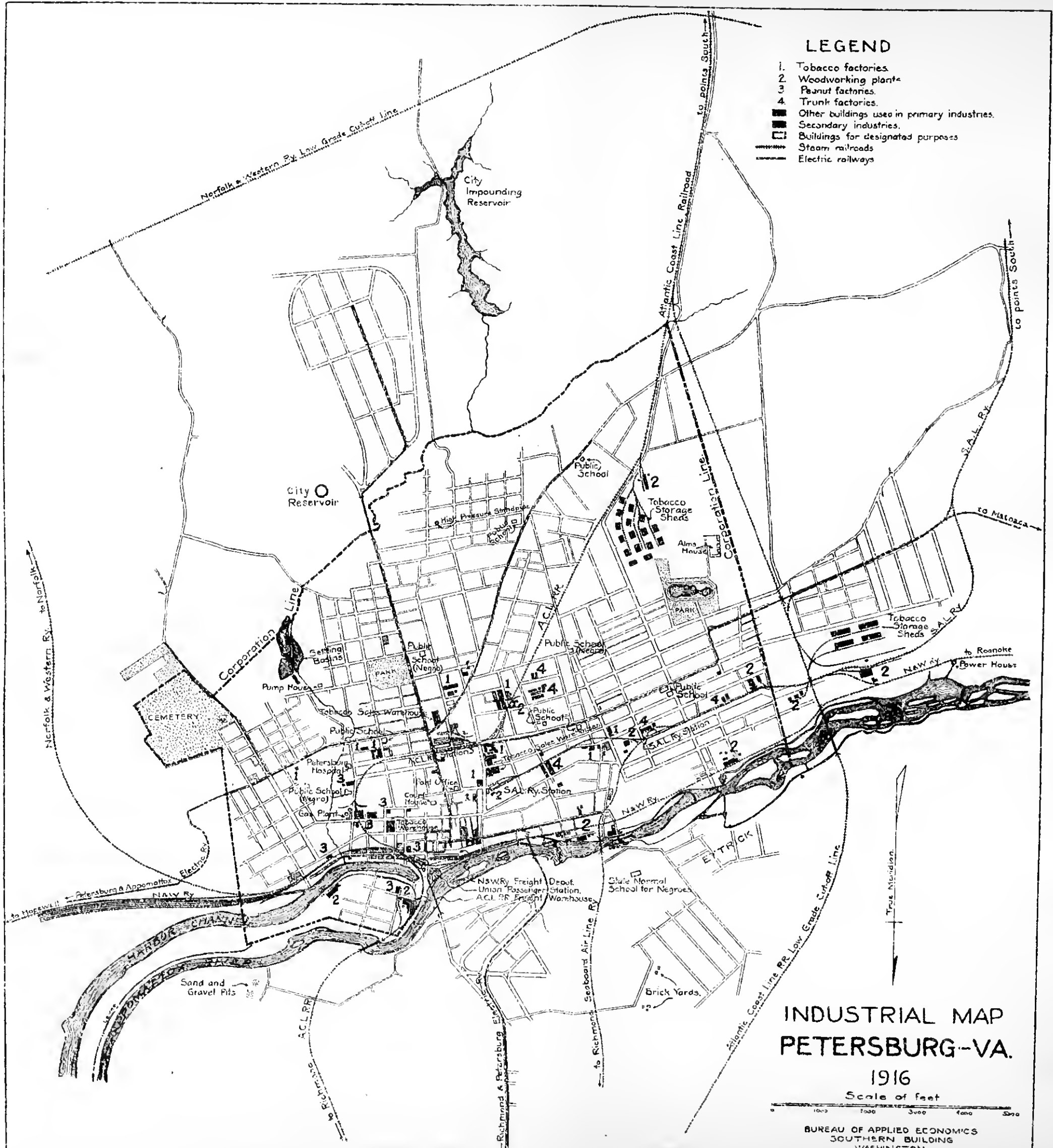
the city, while the low-grade freight lines of the Atlantic Coast Line and of the Norfolk and Western pass around the city on the western and southern edges, respectively. Within the corporate limits, or just beyond them, are numerous unoccupied industrial sites that can be acquired at nominal prices.





# LEGEND

1. Tobacco factories.
2. Woodworking plants.
3. Peanut factories.
4. Trunk factories.
- Other buildings used in primary industries.
- Secondary industries.
- Buildings for designated purposes.
- Steam railroads.
- Electric railways.



## INDUSTRIAL MAP PETERSBURG-VA.

1916

Scale of feet



BUREAU OF APPLIED ECONOMICS  
SOUTHERN BUILDING  
WASHINGTON.



## VI. TOBACCO INDUSTRY

Considering it as a whole, the tobacco industry is the most important of the primary industries at Petersburg. Extensive establishments of the British-American Tobacco Company, of the Export Leaf Tobacco Company, of the Maclin-Zimmer-McGill Tobacco Company, and of Seidenberg and Company are located here. In addition to the plants operated by these concerns, there are four other concerns operating leaf rehandling factories,<sup>8</sup> an independent cigar factory,<sup>9</sup> and three large sales warehouses.<sup>10</sup> Under normal conditions, these establishments employ more than 3,000 persons.

The tobacco manufactures include cigarettes—which are made exclusively for the export trade; cigars; smoking tobacco—also for the export trade; and plug and twist tobacco. The annual value of these products exceeds \$6,500,000. The amount of these manufactures is shown in the following table:

TABLE 3.—*Number of cigarettes and cigars, and number pounds of smoking tobacco, and of plug and twist tobacco manufactured at Petersburg, 1913-1915\**

Year	Cigarettes (Number)	Cigars (Number)	Smoking tobacco (Pounds)	Plug and twist tobacco (Pounds)
1913 } 1914 } ..... 1915 }	6,367,386,000	39,600,000	1,791,000	16,383,000
Annual average...	2,122,462,000	13,200,000	597,000	5,461,000

\*Compiled from official records, and special statements furnished by the several manufacturers.

<sup>8</sup>Wm. B. Beach and Company; Casey and Company; James H. Gray; and R. A. Orr and Company.

<sup>9</sup>James W. Wells.

<sup>10</sup>Moore's Warehouse; Oaks Warehouse Company; and the Virginia Warehouse.

*Leaf Industry*

In addition to its manufactures of tobacco, Petersburg annually stems or rehandles about 30,000,00 pounds of leaf tobacco for the domestic and export trade. Approximately 25,000,000 pounds of leaf tobacco annually are exported from Petersburg, while from 3,000,000 to 5,000,000 pounds are imported for use in the local factories. Taking into consideration the amount of leaf consumed by the local factories in the manufacture of cigarettes, cigars, and smoking, plug and twist tobacco, the total amount of leaf tobacco stemmed and rehandled at Petersburg during a normal year amounts to more than 50,000,000 pounds.

Petersburg also is an important leaf tobacco market. The following table shows the amount of leaf sold on the Petersburg warehouses in the years 1911-1916.

TABLE 4.—*Amount of leaf tobacco sold on the Petersburg warehouses, by specified grades, 1911-1916\**

<i>Year ending September 30th.</i>	<i>Number pounds sold</i>		
	<i>Dark</i>	<i>Bright</i>	<i>Total</i>
1911.....	6,738,730		6,738,730
1912.....	6,911,380		6,911,380
1913.....	5,872,290		5,872,290
1914.....	5,393,420	1,300,990	6,694,410
1915.....	2,872,603	2,423,286	5,295,889
1916.....	3,600,000	1,720,660	5,320,660

\*Compiled from the records of the several Petersburg warehouses.

*Cigarettes*

Cigarettes manufactured at Petersburg all go into the export trade. Of the two billion or more cigarettes annually made here, about 90 per cent are marketed in Asia, about 3 per cent in Central America, about 2 per cent in Scandinavia (Norway, Sweden and Denmark),

while the other 5 per cent are sent to all parts of the world.

In connection with the manufacture of cigarettes, there are annually imported at Petersburg between 12,000 and 15,000 pounds of Turkish tobacco, valued at about 50 cents a pound; about \$15,000 worth of cigarette paper from France and Austria; a large quantity of tin from England for use as casing; and a large assortment of advertising cards and novelties which are enclosed in the cigarette packages, especially in the packages exported to China.

#### *Cigars*

Cigars made at Petersburg are of the 5 and 10 cent grade, and are sold exclusively in the domestic markets. The industry includes two cigar factories, with a combined output of between 10,000,000 and 15,000,000 cigars a year, and a large stemmery, which annually handles between 3,000,000 and 5,000,000 pounds of leaf tobacco.

Approximately 3,500,000 pounds of Cuban and Porto Rican tobacco annually is imported for use in the Petersburg cigar industry.

#### *Smoking Tobacco*

About 50 per cent of the smoking tobacco annually manufactured at Petersburg—between 500,000 and 600,000 pounds—is marketed in Australia and New Zealand, about 10 per cent in Java, and the rest in Central America and other parts of the world. None of the smoking tobacco made at Petersburg is sold in the domestic markets.

#### *Plug and Twist Tobacco*

Petersburg also manufactures between 5,000,000 and 6,000,000 pounds of plug and twist tobacco, of which more than 95 per cent is exported. Sixty per cent of

the amount exported goes to Australia and New Zealand. The rest is sold in Central America, the British West Indies, Canada and England. That which goes to England is used chiefly in ship supplies and finds its way into all parts of the world.

For use in this industry, large quantities of licorice are imported at Petersburg from Spain. Licorice is used in flavoring the tobacco.

### *Leaf Exports*

In addition to its importance as an export tobacco manufacturing center, Petersburg also is an important community for the export of leaf tobacco. The city's export trade in leaf tobacco is carried on by four concerns, each of which has extensive rehandling plants at Petersburg. Of these firms, the Export Leaf Tobacco Company is the most important.

The combined leaf exports at Petersburg amount to about 25,000,000 pounds a year, under normal conditions. Leaf tobacco rehandled at Petersburg for export principally goes to England, India, China, Japan, Australasia, Africa, South and Central America, and to Austria, Italy, France, Netherlands and Spain.<sup>11</sup> This tobacco is grown principally in Virginia, North Carolina and South Carolina, from where it is sent to Petersburg to be prepared for export.

<sup>11</sup>In 1913, the United States exported leaf tobacco as follows:

<i>Country</i>	<i>Pounds</i>
United Kingdom .....	175,026,020
France .....	48,154,511
Italy .....	40,567,680
Germany .....	31,697,427
Netherlands .....	28,997,185
Spain .....	21,384,529
All other countries.....	98,544,309
<b>Total .....</b>	<b>444,371,661</b>

Compiled from "Tobacco Trade of the World," Special Consular Reports—No. 68, United States Bureau of Foreign and Domestic Commerce, 1915, p. 10.

In 1909, according to the Thirteenth Census of the United States, the total production of leaf tobacco in the United States<sup>12</sup> amounted to 1,055,764,806 pounds,<sup>13</sup> as follows:

<i>State</i>	<i>Pounds</i>
Virginia .....	132,979,390
North Carolina .....	138,813,163
South Carolina .....	25,583,049
	<hr/>
	297,375,602
Kentucky .....	398,482,301
All other States.....	359,906,903
	<hr/>
Total United States.....	1,055,764,806

The Thirteenth Census also reported that more than 30,000,000 pounds of tobacco is grown within a radius of fifty miles of Petersburg in the Virginia counties south of the James river, which compose the city's local trade territory.<sup>14</sup> The map which follows shows the strategic geographical location of Petersburg with reference to the tobacco producing areas of the United States.

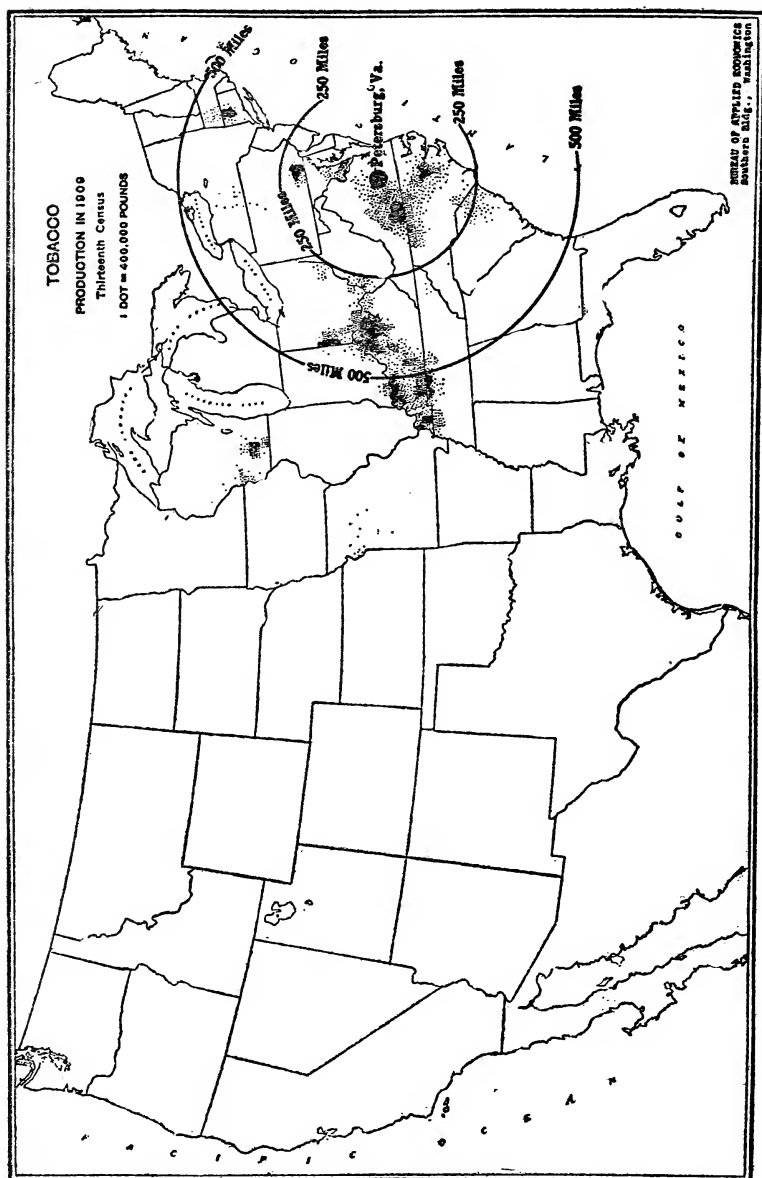
<sup>12</sup>The annual tobacco crop of the world amounts to between 2,500,000,000 and 3,000,000,000 pounds, of which the United States produces about 35 per cent, India about 16 per cent, Russia about 8 per cent, Austria-Hungary about 6.5 per cent, the Dutch East Indies about 6 per cent, and all the other countries together about 28.5 per cent.

The Turkish tobacco crop averages about 75,000,000 pounds a year, and the Cuban crop about 50,000,000 a year.

Compiled from "Tobacco Trade of the World," Special Consular Reports—No. 68, United States Bureau of Foreign and Domestic Commerce, 1915, p. 7.

<sup>13</sup>"Thirteenth Census of the United States, 1910," Vol. V, p. 676.

<sup>14</sup>See table 27, p. 109.



MAP 9.—Geographical location of Petersburg with reference to tobacco production in the United States, according to the Thirteenth Census, 1909

*Labor Employed*

Employment in the Petersburg tobacco factories is afforded more than 3,000 wage earners, as follows:

	<i>Number</i>
Cigarette factories—	
White women and girls.....	700
White men and boys.....	500
Cigar factories—	
White women and girls.....	300
Tobacco factories (smoking, plug, twist and leaf)—	
Negro men and boys.....	1,000
Negro women and girls.....	500
Total .....	<hr/> 3,000

In the warehouses, storage sheds, freight yards, and as teamsters, etc., the tobacco industry provides employment for a number of other persons who are not included among the factory employes enumerated above.

## VII. PEANUT INDUSTRY

According to the Thirteenth Census of the United States, the peanut factories at Petersburg produce 22 per cent of the value of peanuts graded, roasted, cleaned and shelled in Virginia, and 18 per cent of the value manufactured in the United States. Approximately 3,000,000 bushels of peanuts annually are handled by the Petersburg factories, while the total amount of peanuts handled in the city each season averages between 3,250,000 and 3,500,000 bushels, valued at about \$1 per bushel. The factory product is marketed chiefly in the large northern cities, while between \$50,000 and \$100,000 worth of peanuts are exported to Canada annually.

The local peanut industry includes seven large factories,<sup>15</sup> one peanut hull products mill,<sup>16</sup> and six marketing agencies.<sup>17</sup>

The report of the Federal census of manufactures in 1914 gives the following figures for the Petersburg peanut grading, roasting, cleaning and shelling industry.<sup>18</sup>

Number of establishments.....	5
Persons engaged in the industry.....	299
Proprietors and firm members.....	1
Salaried employes .....	28
Wage earners (average number).....	270
Primary horsepower .....	565
Capital .....	\$ 539,575

<sup>15</sup>On July 1, 1916, the following peanut factories were in operation: Barnhardt Mercantile Company; Columbia Peanut Company; Dixie Peanut Company; John H. Maclin Peanut Company; Riverside Peanut Company; Mortimer Williams; and the J. B. Worth Company.

<sup>16</sup>Southern Peanut Hull Mills.

<sup>17</sup>Arrington and Green; E. A. Hartley and Bro.; Martin and Sons; P. Raftery and Son; Robinson and Purdy Corporation; and Rogers, Plummer and Company.

<sup>18</sup>Figures furnished by the United States Bureau of the Census on special request.

Services .....	95,606
Salaries .....	31,900
Wages .....	63,706
Materials .....	2,551,980
Value of products.....	2,800,861

### *Peanut Production*

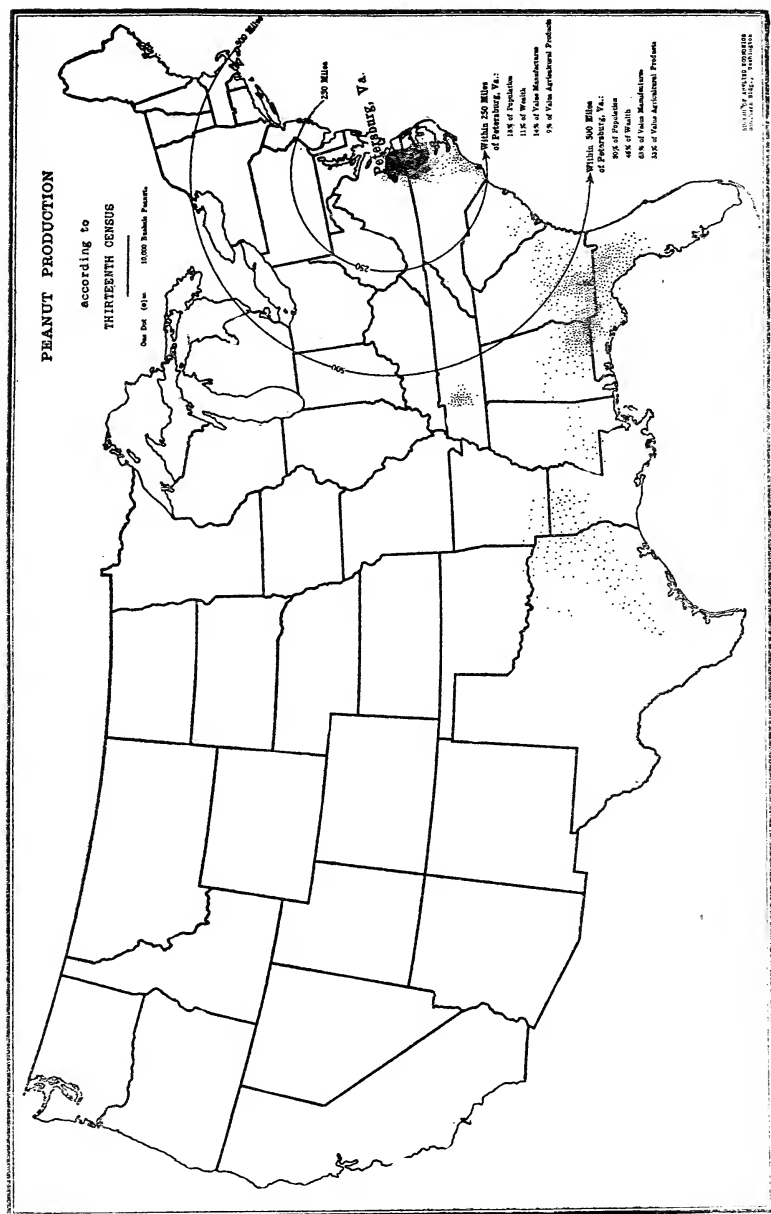
In 1909, according to the Thirteenth Census of the United States, 3,672,246 bushels of peanuts were grown in Virginia within a radius of fifty miles of Petersburg, while the entire annual Virginia crop is grown within 100 miles of the city. A glance at map 10, on page 46, shows that the bulk of the peanut crop of the United States is produced in Virginia and North Carolina within 100 to 150 miles of Petersburg.<sup>19</sup>

The production of peanuts in the twelve Southside Virginia counties included in Petersburg's local trade territory exceeded 2,000,000 bushels in 1909. Map 16, on page 110, shows that peanuts are grown principally in the counties east of the city—in Sussex, Surry and

<sup>19</sup>The production of peanuts in the United States in 1909, by States, was as follows:

	<i>State</i>	<i>Bushels</i>
Total	United States .....	19,415,816
	North Carolina .....	5,980,919
	Virginia .....	4,284,340
	Georgia .....	2,569,787
	Florida .....	2,315,089
	Alabama .....	1,573,796
	Texas .....	1,074,998
	Tennessee .....	547,240
	Louisiana .....	412,037
	Mississippi .....	284,791
	Arkansas .....	168,608
	South Carolina .....	154,822
	Oklahoma .....	31,880
	All other States.....	17,509

Compiled from "Thirteenth Census of the United States, 1910," Vol. V, table 59, p. 629.



MAP 10.—Geographical location of Petersburg with reference to peanut production in the United States, according to the Thirteenth Census, 1909

Prince George. The amount of peanuts produced in the Southside counties in 1909 was as follows:<sup>20</sup>

<i>County</i>	<i>Bushels</i>
Amelia .....	100
Brunswick .....	60,506
Chesterfield .....	65,113
Dinwiddie .....	231,965
Greensville .....	175,518
Lunenburg .....	13
Mecklenburg .....	14,779
Nottoway .....	412
Prince Edward .....	5
Prince George .....	431,586
Surry .....	463,980
Sussex .....	569,205
Total .....	2,013,182

### *Labor Employed*

In January and February—after the local peanut crop largely has been marketed—the Petersburg peanut factories give employment to between 300 and 400 negro wage earners. In August, just before the new crop begins to come in, the number averages about 200. About 80 per cent of the labor employed in these factories are negro women and girls, all of whom are reported by the Federal census of manufactures in 1914 to be over sixteen years of age.

Wages in the peanut industry are standardized in Virginia and adhered to in all of the Southeast Virginia communities except at Suffolk, where lower wages are paid. The standard wage for negro women is \$3 a week, and for men \$7.50 per week. These wages are paid by all the Petersburg plants. No difficulty is experienced at Petersburg in securing all the negro labor desired at these rates.

<sup>20</sup>Compiled from "Thirteenth Census of the United States, 1910," Vol. VII, table 4, p. 810.

## VIII. TRUNK AND VALISE INDUSTRY.

Petersburg is one of the largest trunk and valise manufacturing centers in the United States. The affiliated companies under the American Hardware Company,<sup>21</sup> the Totty Trunk and Bag Company, and the Rogers and Madison Trunk Corporation, together give employment, under normal conditions, to more than 2,000 wage earners. The normal annual output of these factories is valued at between \$2,500,000 and \$3,000,000. The value of Petersburg-made trunks and valises annually exported amounts to about \$150,000.<sup>22</sup>

Statistics of the Petersburg trunk and valise industry, based on the Federal census of manufactures of 1914, are as follows:<sup>23</sup>

Number of establishments.....	7
Persons engaged in the industry.....	1,135
Proprietors and firm members.....	5
Salaried employes .....	142
Wage earners (average number).....	988
Primary horsepower .....	783
Capital .....	\$2,264,059
Services .....	528,138
Salaries .....	143,314
Wages .....	384,824
Materials .....	1,006,860
Value of products.....	1,935,373

In accepting these figures as an index of the importance of the Petersburg trunk and valise industry, it

<sup>21</sup>The affiliated manufacturing concerns under the American Hardware Company on December 1, 1916, were as follows: Seward Trunk and Bag Company; Virginia Trunk and Bag Company; Petersburg Trunk and Bag Company.

The wholesale and distributing concerns included the Standard Trunk and Bag Company; Petersburg Travelling Goods Company; and the Appomattox Trunk and Bag Company.

<sup>22</sup>The companies manufacturing for the export trade are the Seward Trunk and Bag Company, and the Virginia Trunk and Bag Company.

<sup>23</sup>Figures furnished by the United States Bureau of the Census on special request.

should be kept in mind that the 1914 census covers a period in which the local industry was almost idle on account of the depression to which the European war subjected nearly all American non-munition industries. The potential importance of this industry at Petersburg, however, is clearly indicated by the \$2,264,059 of invested capital—an item which the war did not affect during the census year.

### *Raw Materials*

The trunk industry at Petersburg annually consumes about 15,000,000 feet of lumber, a part of which, however, is in the form of veneer. Yellow pine from the Southside Virginia counties and from North Carolina is used almost exclusively in the construction of the trunk boxes. A small quantity of poplar, cypress and gum—principally in the form of veneer—also is used.

Hardware used in the manufacture of the trunks and valises is purchased largely in New Jersey, New York and Connecticut, while a large amount of the fiber used comes from Pennsylvania. According to the Federal census of 1914, more than \$1,000,000 was expended by the Petersburg factories for materials in that year.

### *Labor Employed*

According to the Federal census, the largest number of persons are employed in the Petersburg trunk factories in May and the smallest number in December. Ninety per cent of the operatives enumerated in 1914 were white men and boys over sixteen years of age. A few white women and girls are employed in the lining departments of the several plants. As has been stated, the Petersburg trunk and valise industry gives employment, under normal conditions, to between 2,000 and 2,500 persons.

## IX. WOODWORKING INDUSTRY

Petersburg's woodworking industry annually produces goods valued at between \$1,000,000 and \$1,500,000, and gives employment to more than 500 persons. Exclusive of the box-making departments in the trunk and tobacco factories, the local woodworking industry includes 3 box mills,<sup>24</sup> 1 cooperage, rim and veneer works,<sup>25</sup> 1 excelsior mill,<sup>26</sup> 5 lumber and planing mills,<sup>27</sup> and 1 turning and carving mill.<sup>28</sup> These plants annually consume between 65,000,000 and 75,000,000 feet of lumber, of which about 95 per cent is yellow pine from Virginia and North Carolina.

An average of about 2,000 cars of box shooks are made annually at Petersburg, under normal conditions, of which an amount valued at about \$50,000 goes into the export trade in the form of containers for soap, condensed milk and other canned goods. The bulk of the output of these mills is marketed chiefly in the North and in the Middle West east of the Mississippi river.

### *Timber Supply*

The relative importance of the wood-using industries at Petersburg have caused speculation as to whether or not the timber supply within easy reach of the city is sufficient to care for the rapidly growing demands of the local establishments.

Mr. R. Chapin Jones, States forester of Virginia, says that in his opinion the adequacy of the timber sup-

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<sup>24</sup>Appomattox Box Shook Company; Petersburg Wood Supply Company; and the Virginia Lumber and Box Company.

<sup>25</sup>Petersburg Rim and Veneer Company.

<sup>26</sup>Petersburg Excelsior Mills.

<sup>27</sup>Hobbs-Hoy Company; Petersburg Builders' Supply Company; Roper Bros. Lumber Company (Vosburg Lumber Company); Jacob Savage; and the West End Woodworking Company.

<sup>28</sup>Petersburg Woodworking Company.

ply in the Petersburg-Hopewell area depends entirely on how the owners of the woodland care for and manage their property. An adequate supply of timber is available, he says, for all purposes for many years to come if the forests are cared for properly.

The following table, which shows the estimated stand of timber in Virginia, North Carolina and South Carolina in 1916—a large percentage of which is available for use in the Petersburg industries, substantiates the contention that the supply of timber within reach of the local industries is sufficient to provide for every demand.

TABLE 5.—*Estimated stand of yellow pine, cypress and hardwood timber in Virginia, North Carolina and South Carolina, 1916\**

<i>Kind of wood</i>	<i>Virginia (Billions of feet B. M.)</i>	<i>North Carolina (Billions of feet B. M.)</i>	<i>South Carolina (Billions of feet B. M.)</i>	<i>Total (Billions of feet B. M.)</i>
Yellow pine†.....	8.7	25.6	19.2	53.5
Cypress.....	.2	3.0	2.6	5.8
Hardwoods.....	5.6	14.3	8.9	28.8
Total.....	14.5	42.9	30.7	88.1

\*Figures furnished by the United States Forest Service.

†“Yellow pine” as here used includes loblolly, shortleaf, longleaf and scrub pine.

The amount of lumber produced within the immediate vicinity of Petersburg in Virginia averages between 550,000,000 and 600,000,000 feet per annum. Of this amount, more than 500,000,000 feet is yellow pine. The annual production of lumber in Virginia within fifty miles of Petersburg, by counties, is shown in the following table:

TABLE 6.—*Annual production of lumber in Virginia within a radius of 50 miles of Petersburg, by specified Southside counties, as reported by the Thirteenth Census\**

<i>County</i>	<i>Total cut all kinds (Feet B. M.)</i>	<i>Cut of yellow pine (Feet B. M.)</i>
Amelia.....	18,446,000	13,917,000
Brunswick.....	78,510,000	73,010,000
Chesterfield.....	39,599,000	35,574,000
Dinwiddie.....	84,138,000	76,006,000
Greensville.....	37,570,000	37,228,000
Isle of Wight.....	21,615,000	19,445,000
Lunenburg.....	48,632,000	37,330,000
Mecklenburg.....	47,415,000	41,266,000
Nottoway.....	19,448,000	16,037,000
Prince George.....	3,059,000	2,016,000
Southampton.....	95,474,000	78,324,000
Surry.....	70,483,000	68,662,000
Sussex.....	20,486,000	19,162,000
Total.....	584,875,000	517,977,000

\*Figures furnished by the State Forester of Virginia based on the Thirteenth Census of the United States.

Virginia annually produces nearly one billion feet of lumber in excess of the total State consumption—now shipped away—which is available for local use. More than a half billion of this surplus cut consists of yellow pine from the southeastern counties and can be assembled easily at Petersburg at a relatively low cost. The annual surplus cut of yellow pine in North Carolina exceeds 1 billion and a quarter feet, which also is available for use at Petersburg.

The following table shows the annual surplus production of lumber in Virginia, by specified kinds of wood, which can be drawn upon to supply the wood-using industries at Petersburg.

# WOODWORKING INDUSTRY 53

**TABLE 7.**—*Annual surplus production in Virginia of specified kinds of wood, now exported, which is available for use in the wood-using industries at Petersburg*

<i>Kind of wood*</i>	<i>Virginia production, 1914† (Feet B. M.)</i>	<i>Annual Virginia consumption of home-grown woods‡ (Feet B. M.)</i>	<i>Annual surplus of Virginia production available for Petersburg industries (Feet B. M.)</i>
Total of all kinds specified.....	1,341,128,000	428,557,876	912,570,124
Yellow pine§.....	961,521,000	360,975,641	600,545,359
Oak.....	292,546,000	37,900,037	254,645,963
Poplar.....	65,777,000	19,690,033	46,086,967
White pine.....	12,714,000	6,850,465	5,863,535
Cypress.....	8,570,000	3,141,700	5,428,300

\*Gum is omitted from this table, as the production is less than the quantity consumed in the Virginia industries. See table 8, p. 53, showing the North Carolina supply available for the Petersburg industries.

†Statistics furnished by the United States Forest Service.

‡Compiled from "Wood-Using Industries of Virginia," by Roger E. Simmons (Virginia Department of Agriculture and Immigration, 1912), table 2, p. 17.

§"Yellow pine" as here used includes loblolly, shortleaf, longleaf and scrub pine.

In the next table is shown the annual surplus production of lumber in North Carolina, which also is available for use at Petersburg.

**TABLE 8.**—*Annual surplus production in North Carolina of specified kinds of wood available for use in the wood-using industries at Petersburg*

<i>Kind of wood</i>	<i>North Carolina production, 1914* (Feet B. M.)</i>	<i>Annual North Carolina consumption of home-grown woods† (Feet B. M.)</i>	<i>Annual surplus of North Carolina production available for Petersburg industries (Feet B. M.)</i>
Total of kinds specified.....	2,034,234,000	624,852,000	1,409,382,000
Yellow pine‡.....	1,715,158,000	415,081,000	1,300,077,000
Oak.....	184,898,000	140,178,000	44,720,000
Poplar.....	49,751,000	27,155,000	22,596,000
Gum.....	43,602,000	26,573,000	17,029,000
White pine.....	23,885,000	13,115,000	10,770,000
Cypress.....	16,940,000	2,750,000	14,190,000

\*Statistics furnished by the United States Forest Service.

†Compiled from "Wood-Using Industries of North Carolina," by Roger E. Simmons (North Carolina Geological and Economic Survey, 1910), table 2, p. 14.

‡"Yellow pine" as here used includes loblolly, shortleaf, longleaf and scrub pine.

*Freight Rate Advantages*

Logs and cut lumber can be assembled at Petersburg from important North Carolina points more cheaply than at Richmond, and at the same low freight rates charged from these points to Norfolk, Suffolk, Franklin and Emporia. With the exception of a little lower rate from Georgetown, South Carolina, to Norfolk, the rates from Washington, Newbern, Fayetteville and Wilmington, North Carolina, for instance, are the same to Petersburg as they are to Norfolk. This is significant of the relative advantages possessed by the Petersburg-Hopewell area when the importance of the lumber industry at Norfolk is taken into consideration.

The following table shows the freight rates on logs and cut lumber from Washington, Newbern, Fayetteville and Wilmington, North Carolina, and from Georgetown, South Carolina, to Petersburg, compared with the rates to Richmond, Norfolk, Suffolk, Franklin and Emporia, which are the important lumber manufacturing competitors of Petersburg in the southeast Virginia territory.

TABLE 9.—*Freight rates on logs and cut lumber from specified North Carolina and South Carolina points to Petersburg, compared with Richmond, Norfolk, Suffolk, Franklin and Emporia\**

From—	To— (In cents per 100 lbs.—C. L. minimum 34,000 lbs.)					
	Petersburg	Richmond, Va.	Norfolk, Va.	Suffolk, Va.	Franklin, Va.	Emporia, Va.
North Carolina:						
Fayetteville....	9	10	9	9	9	....
Newbern.....	8	8	8	8	....	8
Washington....	7½	7½	7½	7½	....	7½
Wilmington....	9	10	9	9	9	9
South Carolina:						13
Georgetown....	13	14	10	13	13	

\*Rates furnished by the General Development Agent, Seaboard Air Line Railway Company, December 14, 1916.

The relative freight rate advantage possessed by Petersburg for marketing box shooks, for instance, over North Carolina points is shown in the following table:

TABLE 10.—*Freight rates on box shooks from Petersburg to designated northern and middle western points, compared with Fayetteville, Newbern and Washington, North Carolina\**

To—	From— (In cents per 100 lbs.—C. L. minimum 34,000 lbs.)			
	Petersburg	Fayetteville, N. C.	Newbern, N. C.	Washington, N. C.
Baltimore, Md. ....	9½	16	15	14½
Philadelphia, Pa. ....	12½	19	18	17½
New York, N. Y. ....	18½	25	24	23½
Pittsburgh, Pa. ....	13	22	21	20½
Chillicothe, O. ....	16	25	24	23½
Chicago, Ill. ....	20	29	28	27½

\*Rates furnished by the General Development Agent, Seaboard Air Line Railway Company, December 14, 1916.

### *Labor Employed*

Approximately 60 per cent of the labor employed in the Petersburg woodworking establishments are negro men and boys, who are engaged chiefly in the unskilled occupations. White men and boys compose the other 40 per cent. Skilled work is performed chiefly by white labor at a daily wage of from \$2 to \$3.50. Ten hours a day are worked in all the mills.

In one of the larger mills, for example, 225 wage earners were employed on July 1, 1916, grouped as follows:

	Number	Rate of wages
White men. ....	80	\$1.25 to \$2.25 per day. 8 cents an hour.
White boys. ....	4	
Total white. ....	84	
Negro men. ....	116	\$1.25 to \$1.75 per day. 8 cents an hour.
Negro boys. ....	25	
Total negro. ....	141	
Total number of wage earners..	225	

## X. SECONDARY AND MISCELLANEOUS INDUSTRIES

Supplementing the tobacco, peanut, trunk and valise, and woodworking industries, Petersburg has a group of ten important secondary industries and more than twenty smaller miscellaneous industries. Included in the secondary group are clothing factories, cotton mills, fertilizer plants, fireworks establishments, foundries and machine-shops, grist-mills, hat factories, leather works, printing and publishing houses, and silk mills.

### *Clothing Industry*

The clothing industry at Petersburg gives employment to between 50 and 100 white girls and about a dozen white men. The principal manufacturing establishment<sup>29</sup> in the city makes woolen trousers exclusively, which are marketed in the South, chiefly in Virginia and Tennessee. Overalls also are manufactured on a large scale.

### *Cotton Industry*

Between 200 and 250 white wage earners are employed in the Petersburg cotton mills, of whom 65 per cent are women and girls. No negroes are employed. Cotton drills, ducks, sheeting and hosiery yarns are manufactured.<sup>30</sup> The mills are operated by water power.

The yarn mills, which are located on Swift creek, in Chesterfield county, about three miles north of Petersburg,<sup>31</sup> alone consume more than 1,000,000 pounds of raw

<sup>29</sup>Jacob Cohen and Sons.

<sup>30</sup>On July 1, 1916, only two mills were in operation—the Pocahontas mills of the Virginia Consolidated Milling Company, which make the drills, ducks and sheeting; and the Swift Creek mills of the Chesterfield Manufacturing Company, which manufacture cotton hosiery yarns exclusively. Neither the Matoaca nor the Ettrick mills are at present in operation.

<sup>31</sup>See map 2, between pp. 14 and 15.

cotton a year, and have an annual production valued at about \$250,000. About one-half of the yarn produced in these mills is exported and sold in the South American markets.

Including the consumption of the duPont works, between 500,000 and 600,000 500-pound bales of cotton are now handled at Petersburg annually. Between 10,000 and 15,000 bales are received and handled on the local market each season; while within a radius of 100 miles of Petersburg in Virginia and North Carolina about 150,000 bales of cotton are produced annually.<sup>32</sup>

The average value of the annual cotton crop grown in the Southside Virginia counties included in Petersburg's local trade territory is about \$500,000.<sup>33</sup> The average yield per acre in these counties is higher than the average for the United States; higher than in Georgia, and nearly twice as great as the average yield per acre in Texas.<sup>34</sup>

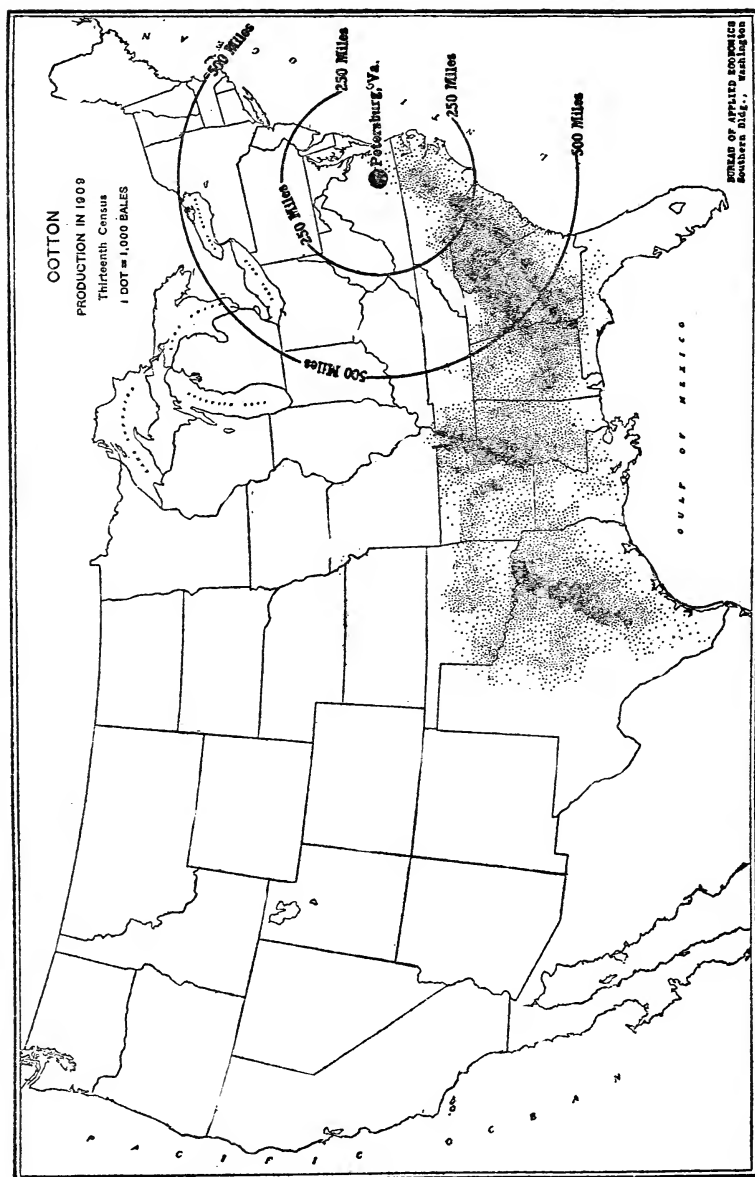
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<sup>32</sup>See map 11, p. 58.

The following Petersburg firms handle cotton: Arrington and Green; E. A. Hartley and Bro.; Martin and Sons; Robinson and Purdy Corporation; and Rogers, Plummer and Company.

<sup>33</sup>See map 16, p. 110.

<sup>34</sup>"Thirteenth Census of the United States, 1910," Vol. V, table 98, p. 682.



MAP 11.—Geographical location of Petersburg with reference to cotton production in the United States, according to the Thirteenth Census, 1909

*Fertilizer Industry*

Twenty thousand tons of dry-mixed fertilizers, valued at about \$500,000, are manufactured annually at Petersburg and sold to the farmers in the Southside Virginia counties. This industry includes three separate establishments,<sup>35</sup> the largest of which has an annual capacity of between 8,000 and 10,000 tons. About 100 negro men are employed in the industry, who are paid \$1.25 a day for ten hours, and 15 cents an hour for overtime during the rush season.

A total of between 75,000 and 100,000 tons of fertilizers are used annually in the local territory, which insures a steady nearby market for the output of the Petersburg plants. According to the Thirteenth Census of the United States, for example, more than \$750,000 was expended for fertilizers in the twelve Southside Virginia counties in Petersburg's local trade territory in 1909,<sup>36</sup> while a total of \$6,932,455 was expended in Virginia during the same year.

<sup>35</sup>Camp Manufacturing Company; Pocomoke Guano Company; and a branch of the Virginia-Carolina Chemical Company.

<sup>36</sup>Expenditures for fertilizers in the twelve Southside Virginia counties in Petersburg's local trade territory, by counties, in 1909, was as follows:

<i>County</i>	<i>Value</i>
Amelia. . . . .	\$ 35,417
Brunswick . . . . .	72,960
Chesterfield . . . . .	25,587
Dinwiddie . . . . .	72,474
Greensville . . . . .	35,421
Lunenburg . . . . .	80,448
Mecklenburg . . . . .	138,149
Nottoway . . . . .	39,409
Prince Edward. . . . .	70,618
Prince George. . . . .	56,136
Surry. . . . .	40,801
Sussex. . . . .	88,789
Total . . . . .	\$756,209

Compiled from "Thirteenth Census of the United States, 1910," Vol. VII, table 4, p. 810.

Phosphates and the other materials can be assembled, mixed and marketed more cheaply at Petersburg than at any competitive point now selling in the Petersburg territory, and plans are being made to increase considerably the local fertilizer production.

### *Fireworks Industry*

The National Fireworks Company operates a plant at Petersburg which turns out about \$200,000 worth of fireworks a year. This plant employs between 25 and 50 wage earners—chiefly negro women and girls, who are employed in the unskilled occupations. A small number of skilled white women and girls also are employed.

In addition to its use as a manufacturing plant, this establishment is used by the National Fireworks Company as a distributing house for the Southeastern States through which the products of other of its plants are marketed.

### *Foundry and Machine Shops*

Under normal conditions an average of between \$100,000 and \$200,000 worth of agricultural, peanut, saw-mill, tobacco, trunk and woodworking machinery is manufactured annually at Petersburg, of which between \$25,000 and \$50,000 worth is marketed in Europe, the West Indies and South America. Agricultural and tobacco machinery are the principal articles exported; peanut machinery is marketed in Virginia, North Carolina, Texas, Louisiana and Missouri, while saw-mill machinery is sold chiefly in Virginia and North Carolina. In addition to the manufacture of machinery, an extensive local repair and foundry business is conducted.

Pig iron used in the local foundries is purchased principally from Virginia and Alabama furnaces; steel shafting is secured from Cumberland, Maryland, and

## SECONDARY INDUSTRIES 61

Pittsburgh, Pennsylvania; while steel beams, miscellaneous parts and pipe are purchased very largely in Pittsburgh and Youngstown, Ohio.

The three Petersburg machine shops,<sup>37</sup> two of which operate foundries, give employment to about 100 wage earners, of whom between 50 and 75 are skilled white mechanics. The Federal census of manufactures in 1914 returned the following statistics for these establishments.<sup>38</sup>

Number of establishments.....	3
Average number of wage earners.....	63
Primary horsepower .....	113
Wages .....	\$ 39,000
Materials .....	55,000
Value of products.....	112,000

### *Gristmills*

Petersburg has five gristmills,<sup>39</sup> with a combined average annual output valued at between \$600,000 and \$650,000. Under normal conditions an average of 750,000 bushels of corn are consumed annually by these mills.

### *Hat Industry*

Asiatic and Milan straw valued at about \$10,000 is imported at Petersburg annually for consumption in the local straw hat industry. The industry includes two manufactories,<sup>40</sup> and gives employment to between 30 and 50 white women and girls. The product of these establishments is marketed principally in New York,

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<sup>37</sup>Appomattox Iron Works and Supply Company; Stratton and Bragg Company; and E. E. Titus. The Appomattox Iron Works and Supply Company and E. E. Titus operate foundries in connection with their machine shops.

<sup>38</sup>Figures furnished by the United States Bureau of the Census on special request.

<sup>39</sup>B. D. Booth and Company; Cockade City Mills; H. F. Munt; J. W. Poole and Son; and R. G. Thompson (Swift creek).

<sup>40</sup>Old Dominion Hat Works, Inc.; and E. A. Savory and Sons.

Philadelphia and Chicago. About \$2,000 worth of hats annually are exported to Canada.

The bulk of the material used is Asiatic straw secured from China and Japan. As only a cheap line of hats are made, a comparatively small quantity of Milan straw is used, which is imported at Petersburg direct from Italy.

### *Leather Industry*

A rather unique industry carried on at Petersburg is that of the Petersburg Leather Company, which imports annually about \$150,000 worth of East Indian sheep skins from London and Madras, which are retanned and finished for the shoe industry in Massachusetts, Maine, Ohio, Illinois, Pennsylvania, New York and Virginia. The annual product of this establishment, including the leather scrap sold in Norfolk for use in the manufacture of chemical fertilizers, is valued at about \$250,000.

This plant employs between 65 and 100 negro wage earners, under normal conditions, about 60 per cent of whom are females.

### *Printing and Publishing Industry*

Between \$100,000 and \$150,000 worth of printing is done annually at Petersburg. The local printing and publishing industry includes 8 establishments,<sup>41</sup> which give employment to between 50 and 100 persons. Combined statistics for these plants, according to the Federal census of manufactures in 1914, are as follows:<sup>42</sup>

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<sup>41</sup>Commercial Printing Company; Franklin Press Company, Inc.; Ideal Print Shop; Index-Appeal Publishing Company; Kirkham and Company; Frank A. Owen; The Daily Progress; and the Virginia Printing and Manufacturing Company.

<sup>42</sup>Figures furnished by the United States Bureau of the Census on special request.

## SECONDARY INDUSTRIES 63

Number of establishments .....	8
Average number of wage earners.....	49
Primary horsepower .....	1,002
Wages .....	\$ 28,000
Materials .....	35,000
Value of products .....	108,000

### *Silk Industry*

Raw silk is imported from China and Japan for manufacture at Petersburg valued at about \$1,300,000 a year. The local mills are controlled by John N. Stearns and Company and give employment to about 150 white women and girls. About 10 or 15 electricians, watchmen, mechanics, firemen and teamsters also are employed.

Silk throwsters exclusively are made in these mills. This product is sent from Petersburg to dye works of the company located in Pennsylvania, and afterwards is woven at Williamsport, Pennsylvania.

### *Miscellaneous Industries*

One of the most important of the miscellaneous industries at Petersburg are the bakeries, which have an annual production valued at between \$75,000 and \$100,000. The Federal census of manufactures in 1914 enumerated 7 establishments,<sup>43</sup> with a combined output valued at \$85,000, as follows:<sup>44</sup>

Number of establishments.....	7
Average number of wage earners.....	28
Primary horsepower .....	18
Wages .....	\$12,000
Materials.....	45,000
Value of products.....	85,000

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<sup>43</sup>American Pie Company; A. and P. Bakery; L. D. Creighton; J. D. Mann; Moran's Bakery; McCauley's Bakery; and James P. H. Smith.

<sup>44</sup>Figures furnished by the United States Bureau of the Census on special request.

Another industry at Petersburg, although one which cannot be classed as a manufacturing industry, but which deserves special mention, is that of sand and gravel excavating and shipping. Between 300,000 and 500,000 tons of sand and gravel are excavated annually in the Petersburg-Hopewell area and shipped away to be used as building and construction material.<sup>45</sup> The average price of this material is 80 cents a ton, making the value of the annual production between \$240,000 and \$400,000.

The mattress industry, which includes two establishments,<sup>46</sup> the carriage and wagon industry, with four establishments;<sup>47</sup> the saddlery and harness industry, embracing two establishments;<sup>48</sup> the bottling industry;<sup>49</sup> the agricultural implement industry;<sup>50</sup> the electric tool industry;<sup>51</sup> the brick and tile industry,<sup>52</sup> and the confectionery and ice-cream industry,<sup>53</sup> also may be mentioned as important among Petersburg's miscellaneous indus-

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<sup>45</sup>The two concerns at present engaged in this industry are Perkinson and Finn, and the Virginia Sand and Gravel Corporation.

<sup>46</sup>John E. Green; and the Petersburg Mattress Company.

<sup>47</sup>Wm. M. Crowder; C. E. Evans Carriage Company; W. M. Lewis and Bro.; and T. E. Westmoreland.

<sup>48</sup>J. L. Brandon and Company; and Wm. J. Terry.

<sup>49</sup>Atlantic Beverage Corporation; Bain's Bottling Works; Coca-Cola Bottling Works; Lemon-Kola Bottling Works; Pepsi-Cola Bottling Works; and the Portner Brewing Company.

<sup>50</sup>J. R. Ayers.

<sup>51</sup>American Electric Tool Company.

<sup>52</sup>Brister and Knowles; Broadway Brick Company; and W. R. Turner.

<sup>53</sup>C. C. Alley; H. P. Harrison Company; E. E. Johnson; J. A. Lanier; The Palms; Purity Corporation; Queen City Confectionery Company; and John Wood.

tries.<sup>54</sup> As most of the establishments in this group are comparatively small, and are of a more or less local character, a detailed description of them would be out of place in this brief enumeration of Petersburg's economic and industrial assets.

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<sup>54</sup>Other manufacturing establishments included in the miscellaneous group are as follows:

*Brooms*—Seaboard Broom Company.

*Butter*—Petersburg Dairy Company.

*Dyeing and cleaning*—Crutchfield Dyeing and Cleaning Corporation.

*Flavoring extracts*—Southern Chemical Company.

*Fountain pens*—Edison Pen Company.

*Ice*—Petersburg Crystal Ice Company; and J. B. Worth Company.

*Monuments and tombstones*—Burns and Campbell.

*Moving picture screens*—Petersburg Sales Company.

*Optical goods*—E. H. Titmus; and Smith and Mercer.

*Patent medicines*—Peerless Medicine Company; Purity Pharmacal Company; Rigotone Manufacturing Company; and the Scott Manufacturing Company.

*Steam laundries*—Model Steam Laundry; Petersburg Steam Laundry; and Stafford's Laundry.

*Upholstering materials*—E. H. Stewart.

## XI. EXPORT MANUFACTURES AND FOREIGN TRADE

Petersburg's industrial prosperity is maintained largely by its extensive and diversified export manufacturing industry. Petersburg-made goods, valued at more than \$8,000,000 a year, exclusive of the value of the product of the munitions works of the E. I. duPont de Nemours and Company at Hopewell, are sold throughout the world. Including the value of the Chilian nitrates imported for use in the Hopewell works, goods valued at more than \$10,000,000 annually are imported from abroad for consumption in the local factories. Approximately only about one-half the value of the goods exported by the Petersburg factories, however, pass through the local United States customs house; while not more than 5 per cent of the value of the goods imported for use in these establishments are entered at Petersburg.

The following table shows the value of the exports and imports of the Port of Petersburg, during specified years, according to the records of the local customs house. The exports shown in this table are composed entirely of manufactured tobacco from the Petersburg factories.

TABLE 11.—*Value of exports and imports of the Port of Petersburg, by years 1911-1915\**

<i>Fiscal year ending June 30th.</i>	<i>Value of exports</i>		<i>Value of imports</i>	<i>Customs receipts</i>
	<i>Declared</i>	<i>Actual</i>		
1911.....	\$ 1,718,893	\$ 2,062,672	\$ 366,691	\$ 110,384
1912.....	3,303,844	3,964,613	488,356	142,329
1913.....	4,014,847	4,817,816	570,342	137,967
1914.....	4,746,677	5,696,012	660,456	177,715
1915.....	4,002,075	4,802,490	256,861	86,873
Total.....	\$17,786,336	\$21,343,603	\$ 2,342,706	\$ 655,268

\*Compiled from and based on the official records of the United States Customs House at Petersburg.

*Summary of Exports*

Manufactured tobacco, including cigarettes, smoking and plug and twist tobacco, valued at between \$5,000,000 and \$6,000,000 per annum, are the principal articles exported from Petersburg, which, together with about 25,000,000 pounds of leaf tobacco, are marketed chiefly in Asia, Australasia, Europe, South America and Africa.

Cotton yarns made at Petersburg, valued at between \$100,000 and \$150,000 a year, are exported for the South American trade; trunks and valises valued at about \$150,000 annually are marketed in Central and South America; peanuts valued at \$100,000 a year are shipped to Canada; agricultural machinery valued at about \$50,000 a year is sold in the West Indies, Mexico, South America and Europe; and straw hats valued at about \$2,000 a year are exported to Canada; while approximately \$50,000 worth of Petersburg-made box shooks annually find their way indirectly into the export trade.

*Summary of Imports*

Exclusive of the value of the Chilian nitrates imported for the munitions industry at Hopewell, raw silk is the principal article imported, of which an amount valued at more than \$1,300,000 a year is imported for the Petersburg silk industry. The local leather industry annually imports about \$150,000 worth of East Indian sheep skins; while about \$10,000 worth of Asiatic and Milan straw annually is imported from China, Japan and Italy for the local hat industry. Between 3,000,000 and 5,000,000 pounds of leaf tobacco, valued at more than \$1,000,000, is imported from Cuba, Porto Rico and Turkey for the cigar and cigarette industry; while seeds from France and the Netherlands, licorice from Spain, tin and advertising novelties from England, and other miscellaneous articles, together valued at between \$500,000 and \$1,000,000, are imported each year for use in the Petersburg industries.

## XII. LABOR, WAGES AND HOURS

A careful canvass of the industrial establishments in the Petersburg district during the summer of 1916 showed that approximately 6,500 persons are employed under normal conditions. The Federal census of manufactures in 1914 reported 4,320 engaged in manufactures within the city proper. Establishments located within the local Petersburg district, but outside of the city limits, were not included in this enumeration. The census also was taken at a time when the local factories were badly demoralized by the beginning of the European war, which threatened for a time to close the export factories entirely. It is thus thought that 6,500 is more nearly the correct number of persons industrially employed at Petersburg than the census figure. Of this number, about 4,000 are white and the remainder—about 2,500—are negroes.

The 4,000 white employes include about 2,500 men and boys and approximately 1,500 women and girls. White men and boys are employed chiefly in the trunk and valise factories, cigarette factories, cotton mills, machine shops, printing shops, and in the smaller miscellaneous industries. The women and girls are employed principally in the cigarette and cigar factories, silk mills, cotton mills, and in the clothing and hat factories.

Negro men and boys are employed in the largest numbers in the tobacco factories, woodworking plants, peanut factories, and in the fertilizer and leather works. The negro women and girls are found chiefly in the tobacco and peanut factories, and in the leather works and the fireworks plant.

*Hours*

With but few exceptions, ten hours a day and sixty hours a week are worked in the Petersburg industrial establishments. In the cigarette factories, which offer an exception to the general rule, fifty-six hours a week are worked—only six hours being worked on Saturdays.

*Wages*

Industrial wages paid white men in Petersburg, exclusive of the printing and machine shops and the munitions works at Hopewell, average between \$10 and \$15 a week. In the machine shops and foundries, machinists receive \$3.25 to \$3.50 a day and molders \$2.25 to \$2.75 a day; while in the printing industry, pressmen are paid \$15 to \$18 a week, binders about \$25.50 a week, and compositors \$15 to \$25 a week. The average weekly wage for white men and boys in the trunk factories is about \$10, in the tobacco industry between \$8 and \$15, in the cotton mills about \$10, and in the woodworking establishments from \$12 to \$15.

White women and girls employed in the local factories and mills earn an average weekly wage of between \$6 and \$10. The average wage in the cigar and cigarette factories, and in the silk mills, is from \$8 to \$10 a week, in the cotton mills about \$7.50 a week, and in the clothing industry from \$7 to \$10 a week. In the silk mills winders are paid \$2 to \$2.35 a day, spinners \$1.12, doublers \$1.50 to \$2.25, twistors \$1.50, reelers \$1.25 to \$1.75, and lacers \$1 to \$1.35 a day.

Negro men employed in the local factories earn from \$7.50 to \$10 a week. In the machine shops as helpers, in the tobacco factories, and in the fertilizer and leather works the weekly wages paid negro men average about \$10. In the woodworking establishments they earn about \$8 a week, and in the peanut and fertilizer indus-

tries they receive \$7.50 a week. The negro women earn from \$2.50 to \$6 a week. Negro women employed in the peanut factories are paid a uniform wage of \$3 a week, in the leather works they make \$3.60 a week, and in the tobacco factories earn on an average of from \$3 to as much as \$6 a week in some instances.

The wage scale for the local Petersburg building trades, in force on July 1, 1916, provides for an eight-hour day, and includes bricklayers at 65 cents an hour, carpenters at \$3 to \$4 a day, painters at \$3.50, plasterers at \$3.50 to \$4, hod carriers at \$2.50 to \$3.50, plumbers at \$2.50 to \$3.50, and stone masons and cutters at \$4.50 to \$5 a day. These rates of pay and hours conform very closely to the standard union scale of wages and hours demanded in the building trades in other industrial communities throughout the United States.

### *Available Labor Supply*

While in some of the local industries there is a demand for more labor, the experience in other industries has clearly shown that where adequate wages are offered in conjunction with proper sanitary working and living conditions there is no difficulty in securing plenty of labor in the Petersburg-Hopewell area. The fact that the E. I. duPont deNemours and Company assembled approximately 30,000 men at their Hopewell works within a few months shows the ease with which an adequate labor force can be organized in the community. In fact, the available labor supply in the Virginia and Carolina urban and rural communities which can be drawn on to supply the industrial demands at Petersburg is more than sufficient to care for all possible future demands.

Industrial labor is unorganized in the Petersburg-Hopewell area, and, with the exception of one or two

minor disturbances, the local establishments have never experienced a strike or serious labor trouble. One reason for this is that a large number of the wage earners are native residents of Petersburg and vicinity, who, in many instances, own their homes and are permanent, interested and active citizens of the community.

### XIII. INDUSTRIAL POWER AND WATER SUPPLY

Petersburg is built along the Appomattox river at the point where the tide and current meet. Just below this point the flow of the river is diverted into a drainage canal and carried about six miles below the city before allowed to re-enter the original channel.<sup>55</sup> This diversion scheme is effected by a dam across the original channel a few hundred feet below the highest up-river point reached by the tide, which is at the foot of the first falls. This dam creates a tidewater harbor of the original channel, which is protected from the river freshets.

#### *Electric Power*

Within five miles of the head of tidewater, the falls of the Appomattox have a maximum hydro-electric development of 20,000 constant horsepower. About one-half of this water power is now used. These power rights are controlled by the Virginia Railway and Power Company, which can develop about 15,000 horsepower under its holdings; and by four local manufacturing concerns, which together can develop the other 5,000 horsepower under their rights. The power company now develops and uses about 6,000 horsepower.

In addition to the power which can be furnished from the Appomattox, about 1,000 horsepower can be developed on Swift creek during about nine months of the year, while the Virginia Railway and Power Company has an interchangeable power transmission line, of 8,000 horsepower capacity, between Petersburg and Richmond, and is building (December, 1916) a second 8,000 horsepower line between the two cities. By means of these

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<sup>55</sup>See map 2, between pp. 14 and 15; and map 8, between pp. 36 and 37.

exchange lines, Petersburg is able to secure an additional 16,000 electric horsepower from Richmond if required. At Richmond, the Virginia Railway and Power Company can develop about 12,000 electric horsepower on its water rights on the James river and has a 60,000 horsepower steam plant in operation. This exchange of electric power between the two cities is especially significant in view of the fact that the power and lighting rates charged by the company are the same at Petersburg and Richmond. As soon as the demand justifies the construction of transmission lines, the company also will sell power in Hopewell, City Point and intermediate points at the Petersburg-Richmond rates.

### *Electric Power Rates*

In large amounts the Virginia Railway and Power Company will furnish hydro-electric power in the Petersburg-Hopewell area at 1 cent per kw. h. and less. A rate as low as one-third of a cent per kw. h. can be obtained if the amount of power required and the importance of the enterprise justify the concession.

The Virginia Railway and Power Company sells electric power to the city of Petersburg for pumping purposes, for example, at a flat rate of 1 cent per kw. h., free of any demand charge. In another case, it furnishes power to the Petersburg and Appomattox Railway Company (the interurban electric line between Petersburg and Hopewell) for the operation of its cars and for other purposes at the rate of .9 of one cent per kw. h., under a 350 kw. h. demand. The demand of the Petersburg and Appomattox company, however, has never been as low as 350.

A study of thirty selected cities made by the United States Bureau of the Census revealed that the average rate charged for electricity, per kw. h., for residential

lighting purposes ranged from 9.4 cents to 9.1 cents; for commercial lighting from 8.1 cents to 6.4 cents, and for industrial power purposes from 6.7 cents to 3.2 cents.<sup>56</sup> The average published rate for domestic lighting at Petersburg is from 10 cents to 1.7 cents per kw. h., and for industrial power from 5.6 cents to .7 cents per kw. h.

The following table shows the approximate rates charged for electricity at Petersburg compared with the published rates charged at Baltimore, Maryland; Charleston, South Carolina; Hartford, Connecticut; Evansville, Indiana; Omaha, Nebraska; and Marquette, Michigan.

TABLE 12.—*Approximate rates charged for electricity at Petersburg, compared with the rates in six specified representative cities in other parts of the United States\**

Name of city	Domestic lighting (Rate per kilowatt hour per month)		Industrial power (Rate per kilowatt hour per month)	
	Cents	Cents	Cents	Cents
PETERSBURG.....	10	to 1.7	5.6	to .7†
Baltimore, Md.....	10	to 1.5	5	to 1.5
Charleston, S. C.....	10	to 4	6	to 1‡
Hartford, Conn.....		9	4.5	to 1.33
Evansville, Ind.....	7.5	to 3.25	5	to 2.5
Omaha, Neb.....	12	to 6	9	to 1§
Marquette, Mich.....	5	to 2	3	to 1

\*Rates for Baltimore and Charleston compiled from "Brown's Directory of American Gas Companies, 1915," pp. 110 and 263; those for Hartford, Evansville, Omaha and Marquette compiled from "Central Electric Light and Power Stations, 1912," United States Bureau of the Census.

†This rate is for consumption of over 600,000 kilowatt hours per month, plus a demand charge of \$600 per annum for 37.5 kilowatts, and \$16 a year for each additional kilowatt of demand.

‡Plus a primary charge.

§Demand charge is \$1.25 per month per kilowatt of capacity connected, for installations of over 150 horsepower.

It is interesting to know in this connection that after a general comparative study of 358 privately owned elec-

<sup>56</sup>Compiled from "Central Electric Light and Power Stations, 1912," United States Bureau of the Census, p. 170.

tric power plants and of 15 owned and operated by municipalities, the Bureau of Applied Economics found that more than 50 per cent of the private plants charged more than 10 cents per kilowatt hour for lighting service, while 93 per cent of the municipal plants charged less. Twenty-seven per cent of the municipal plants charged less than 6 cents, while less than 3 per cent of the 358 private plants published rates as low as this.

### *Manufactured Gas*

Manufactured gas for lighting, industrial and power purposes is furnished at Petersburg by the Petersburg Gas Company, a private concern, which, with its present plant and equipment, has a generating capacity of 800,000 cubic feet per 24 hours. During the year 1915 the company sold 76,725,000 cubic feet of gas, of which about 10 per cent was used for industrial and power purposes.

### *Price of Gas*

The local rate charged for gas for lighting purposes is \$1.15 per 1,000 cubic feet, and for industrial and power purposes \$1 per 1,000 cubic feet. In the following table the price of manufactured gas for lighting, fuel and power at Petersburg is compared with the prices at Richmond and the five principal South Atlantic ports.

TABLE 13.—*Price of manufactured gas at Petersburg, compared with Richmond and the five principal South Atlantic ports\**

Name of city	Net price per 1,000 cubic feet		Ownership of plant
	Lighting	Fuel and power	
PETERSBURG.....	\$1.15	\$1.00	Private.
Richmond, Va.....	.90	.90	Municipal.
Baltimore, Md.....	.80	.80	Private.
Norfolk, Va.....	1.00	1.00	Private.
Wilmington, N. C.....	1.25	1.25	Private.
Charleston, S. C.....	1.10	1.10	Private.
Savannah, Ga.....	1.10†	.80‡	Private.

\*Compiled from "Brown's Directory of American Gas Companies, 1915"; a special report of the Petersburg Gas Company; and from "Retail Prices," Bulletin No. 197, United States Bureau of Labor Statistics, table F, p. 370.

†Under 10,000 cubic feet.

‡Over 50,000 cubic feet.

From the above table it would appear that the price of gas at Petersburg is unusually high, for, with the exception of Wilmington, the rate for lighting is higher at Petersburg than at any of the other cities enumerated, while the rate for fuel and power is higher than at Richmond, Baltimore and Savannah. When a broader comparison is made, however, the Petersburg rates are found to be comparatively low.

For example, the Bureau of Applied Economics made a careful study of the rates for manufactured gas among 870 privately owned and 23 municipal plants, located in all parts of the United States, which revealed that 599, or 69 per cent, of the private plants and 10 of the municipal plants charged more for gas than Petersburg consumers have to pay. This study further revealed that 248 of the 870 private plants studied—29 per cent—and 3 of the municipal plants maintained minimum net rates in excess of \$1.50, and that 18 of the private plants charged \$2 or more.

It can thus be argued with assurance as well as propriety that the Petersburg rates of \$1.15 and \$1, respectively, are not excessive when compared with the gas rates in general throughout the United States.

### *Municipal Water Supply*

Petersburg's municipal water supply is derived from the Appomattox river. The water is taken from the power canal of the Virginia Railway and Power Company, just above the power-house, about two miles above the head of the harbor, at an elevation of 110 feet about tidewater. The average daily consumption in July, 1916, was about 2,000,000 gallons per 24 hours. By contract, the city is entitled to take as much as 10,000,000 gallons of water a day free from the company's canal. Under pressure, the present main through which the water is brought into the city has a daily capacity of about 5,000,000 gallons.

In addition to the river supply of water, Petersburg has an auxiliary water supply located on the southern edge of the city.<sup>57</sup> This reservoir, which was formed by damming a narrow ravine through which flows a small, spring-fed stream, has a storage capacity of 90,000,000 gallons, and an average daily overflow, under normal conditions, of about 1,000,000 gallons. The city owns the entire watershed around this impounding reservoir, which includes about 1,500 acres.

The water from both the river and the reservoir is passed through a purification process before it is allowed to enter the city mains. This process includes sedimentation, coagulation, sand filtration and chemical sterilization. After purification, the water is pumped into elevated standpipes and distributed by gravitation. As delivered to the consumers, the water is extremely soft

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<sup>57</sup>See map 8, between pp. 36 and 37.

and of excellent quality for boiler and general industrial use.

### *Water Rates*

The price of water for domestic purposes at Petersburg is \$1.50 per 1,000 cubic feet.<sup>58</sup> The minimum charge for water is 40 cents a month plus a meter rent of 10 cents. The published rates for city water are as follows:

For 3,000 ft. and under.....	\$1.50 per 1,000 ft.
For all in excess of 3,000 ft. up to 13,000 ft. . .	.75 per 1,000 ft.
For all in excess of 13,000 ft.....	.50 per 1,000 ft.

The meter rents, which are charged in addition to the water rates, are as follows:

5/8-inch meter.....	10c. per month
3/4 " " .....	15c. " "
1 " " .....	18c. " "
1 1/2 " " .....	35c. " "
2 " " .....	65c. " "

The following table shows the retail price of water at Petersburg compared with Richmond, Norfolk and Baltimore, and seven other specified representative cities in other parts of the United States.

TABLE 14.—*Retail price of water at Petersburg, compared with ten specified representative cities in other parts of the United States\**

<i>Name of city</i>	<i>Meter rates per 1,000 gallons</i>	<i>Minimum charge per annum</i>
PETERSBURG.....	\$0.20	\$ 6.00
Richmond, Va.....	.15	†
Norfolk, Va.....	.15	6.00
Baltimore, Md.....	.09	6.00
Youngstown, O.....	.16	†
Lynn, Mass.....	.20	†
Fort Worth, Texas.....	.30	†
Augusta, Ga.....	.10	10.00
Lancaster, Pa.....	.05	†
Saginaw, Mich.....	.11	10.00
Rockford, Ill.....	.16	3.20

\*Compiled from "General Statistics of Cities, 1915," United States Bureau of the Census, pp. 159-185.

†Not reported.

<sup>58</sup>One cubic foot of water contains 7.41 United States standard gallons.

A study of the water rates in 75 selected American cities, as reported by the United States Bureau of the Census,<sup>59</sup> shows that in 30 per cent of them the retail price of water for domestic purposes exceeds \$1.50 per 1,000 cubic feet; while in 76 per cent of them the wholesale price, per 1,000 cubic feet, is in excess of 50 cents.

The retail price of water for domestic purposes in these 75 cities, by number of cities and per cent of total, in which specified rates are charged, is as follows:

<i>Rate per 1,000 cubic feet</i>	<i>Number of cities</i>	<i>Per cent. of total</i>
.....	75	100.00
\$2.50 to \$3.00	2	2.67
2.00 to 2.50	6	8.00
1.50 to 2.00	14	18.66
1.00 to 1.50	31	41.34
.75 to 1.00	8	10.66
.50 to .75	8	10.66
.25 to .50	5	6.67
Below .25	1	1.34

The wholesale price of water for industrial and commercial purposes in these same cities, by number of cities and per cent of total, in which specified rates are charged, is as follows:

<i>Rate per 1,000 cubic feet</i>	<i>Number of cities</i>	<i>Per cent. of total</i>
.....	75	100.00
\$1.50 to \$2.00	4	5.33
1.00 to 1.50	13	17.33
.75 to 1.00	19	25.33
.50 to .75	21	28.00
.25 to .50	17	22.67
Below .25	1	1.34

A study of these rates reveals the relative price of water at Petersburg. The lack of uniformity in water-charge schedules published in different cities makes it very difficult to compare the rates in one city with those in force in sufficient number of other cities to determine the relative price. From the data available, however, it appears that the rates charged for water at Petersburg, taking into account the quality of the water, are comparatively low.

<sup>59</sup>"General Statistics of Cities, 1915," United States Bureau of the Census, pp. 159-185.

## XIV. FUEL SUPPLY

One of the first requisites for the industrial development of any locality is abundant, high-grade and cheap fuel. In respect to both coal and coke Petersburg is most fortunately situated. It has extensive coal deposits at its very doors, and adequate railway connections and favorable freight rates from the finest coal fields in the world. Moreover, the city is on the direct line of the regular heavy movement of Pocahontas and New River coals to tidewater at Hampton Roads, which insures a constant and abundant supply of a high-grade, cheap fuel at all times.

### *Local Chesterfield Coal Deposits*

In what is known as the Richmond coal basin, lying within twenty miles of Petersburg in Chesterfield county, are important coal deposits.<sup>60</sup> In comparison with the vast coal measures of the Appalachians, this basin is small, but in years past it was an important factor in the economic development of eastern Virginia. It is a valuable industrial asset at the present time.

The first coal mined in the United States was taken from this basin in 1750, and until within recent years these deposits formed the chief fuel supply of eastern Virginia. When the Pocahontas fields were opened, in the early eighties, the output of the local mines declined under the competition, and in the past few years they have hardly been worked at all.

The coal in this basin is not equal to Pocahontas or New River coals for steam purposes, but it is equal to some of the coal used in the Central States, and is far superior to much of the coal used in the Western States. The fact that it was used formerly, and that

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<sup>60</sup>See map 12, between pp. 82 and 83.

it is easily available, insures Petersburg against excessive prices for West Virginia coal. These deposit provide a local supply of cheap fuel for household and other use in which superlative quality is less desirable than low price. Just as householders and many manufacturers of the Middle West use the lower quality and cheaper local coals in preference to the higher quality but higher priced Pennsylvania and West Virginia coals, so also the local Chesterfield coal can be used to lower the cost of living and of production in the Petersburg-Hopewell area.

The chief difficulty with this local coal deposit is that the geologic structure is such as to make doubtful the profitable operation of large mines. The Chesterfield basin is reported to contain, however, over 1,000,000,000 tons of coal. From small operations a sufficient tonnage is available to supply a variety of local demands for cheap coal of medium grade.<sup>61</sup>

#### *Supply of Pocahontas and New River Coal*

The superior quality of Pocahontas and New River coals is too well known to require extended explanation. They are universally recognized as the premier steam coals of America, and rank among the highest in the world, being able to compete with the renowned Cardiff coal of Wales. The United States navy, the most exacting coal purchaser in this country, principally buys these coals for its battleships.

In 1915 the Norfolk and Western Railway moved 7,530,-607 gross tons of Pocahontas coal through Petersburg

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<sup>61</sup>A typical analysis of the Chesterfield coal is shown in table 17, p. 85.

to Hampton Roads.<sup>62</sup> The Norfolk and Western, the Chesapeake and Ohio and the Virginian railroads together delivered a total of 14,812,480 gross tons of Pocahontas and New River coal at Hampton Roads in 1915.<sup>63</sup>

The relative importance of the bituminous coal movement through the Petersburg-Hopewell area is more apparent when the Hampton Roads receipts are compared with those at the other important Atlantic ports. The total bituminous coal receipts at important Atlantic ports in 1915 was as follows:<sup>64</sup>

<i>Port</i>	<i>Net tons</i>
Hampton Roads.....	16,278,484
Norfolk and Western Railway.....	8,208,883
Chesapeake and Ohio Railway.....	4,578,782
Virginian Railway .....	3,490,819
New York .....	11,116,000
Baltimore .....	6,749,336

In 1914, according to the reports of the United States Geological Survey, the production of Pocahontas and New River coal, by principal counties in which the mines are located, was as follows:<sup>65</sup>

<i>West Virginia—</i>	<i>Net tons loaded at mines for shipment</i>
McDowell county (Pocahontas center).....	13,193,032
Mercer county .....	2,627,554
Fayette county (New River center).....	8,267,536
Raleigh county .....	5,297,210
<i>Virginia—</i>	
Tazewell county (Pocahontas).....	1,169,997
<b>Total .....</b>	<b>30,555,329</b>

<sup>62</sup>See map 12, between pp. 82 and 83.

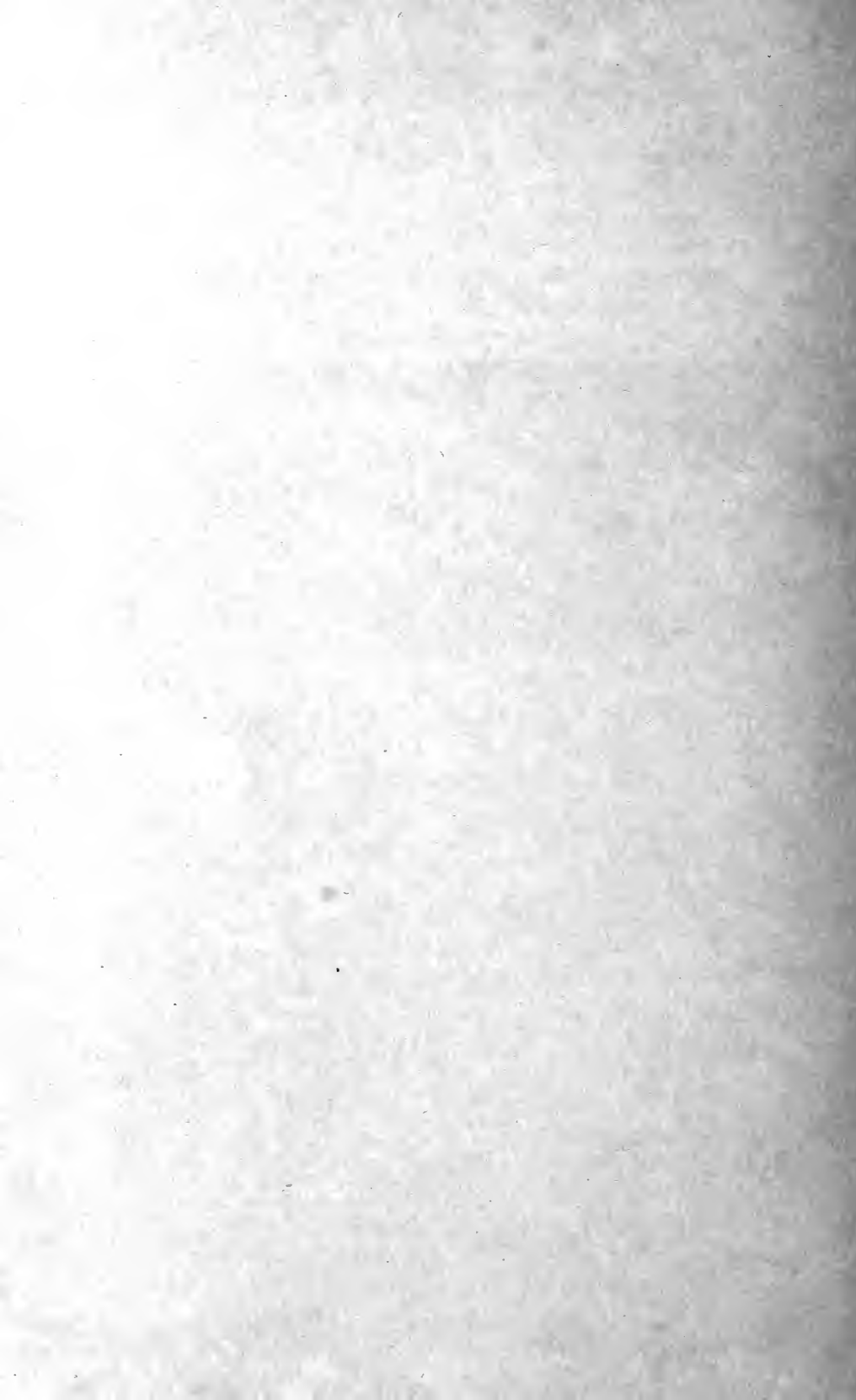
<sup>63</sup>Compiled from "The Coal Trade" for 1916, by Frederick E. Saward, p. 42.

<sup>64</sup>Compiled from "The Coal Trade Bulletin" (Pittsburgh), December 1, 1916, Vol. XXXVI, No. 1, p. 43.

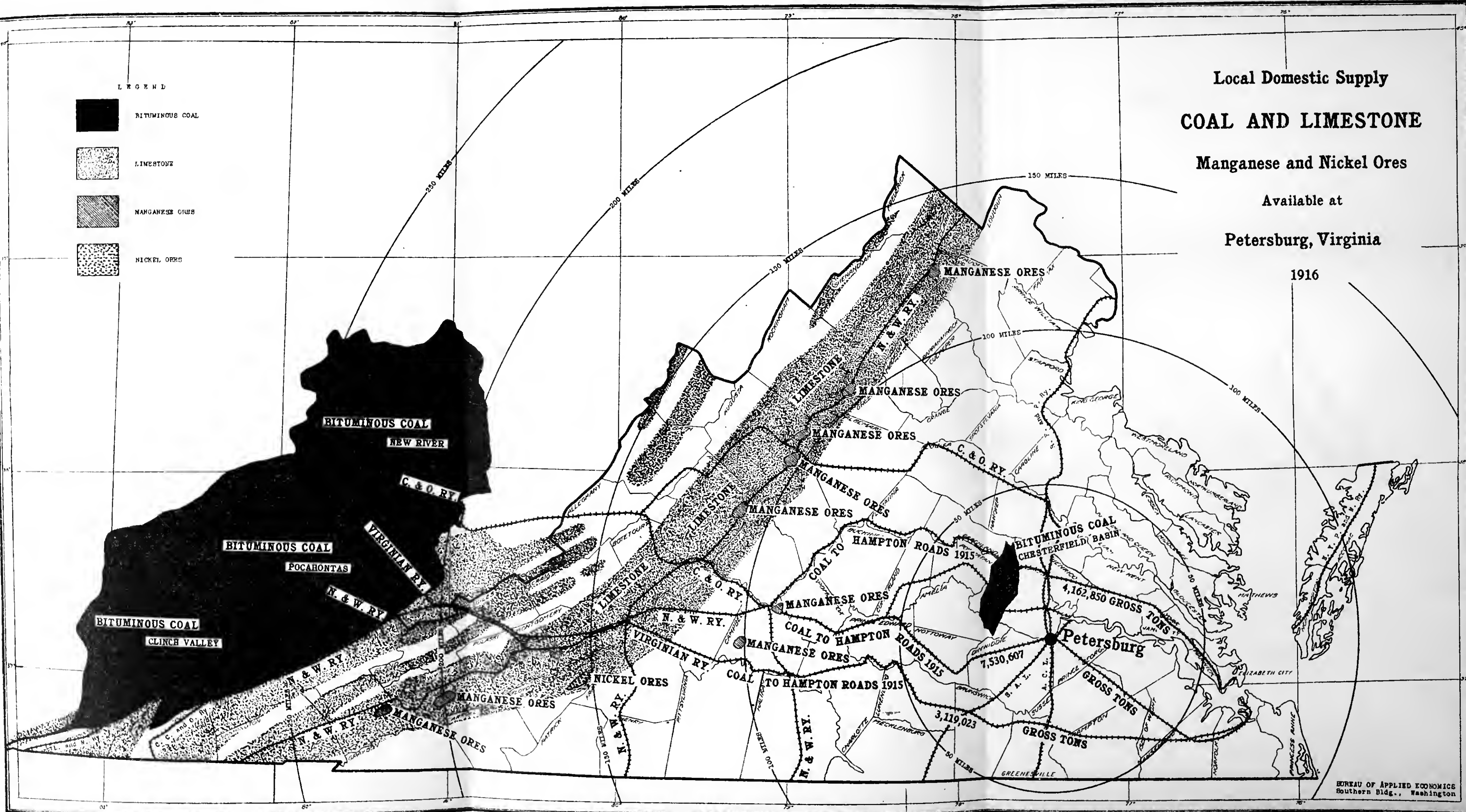
The total quantity of bituminous coal received at Philadelphia in 1915 was not reported.

<sup>65</sup>Compiled from "The Production of Coal in 1914," by C. E. Leshner (United States Geological Survey, 1915), pp. 733 and 739.

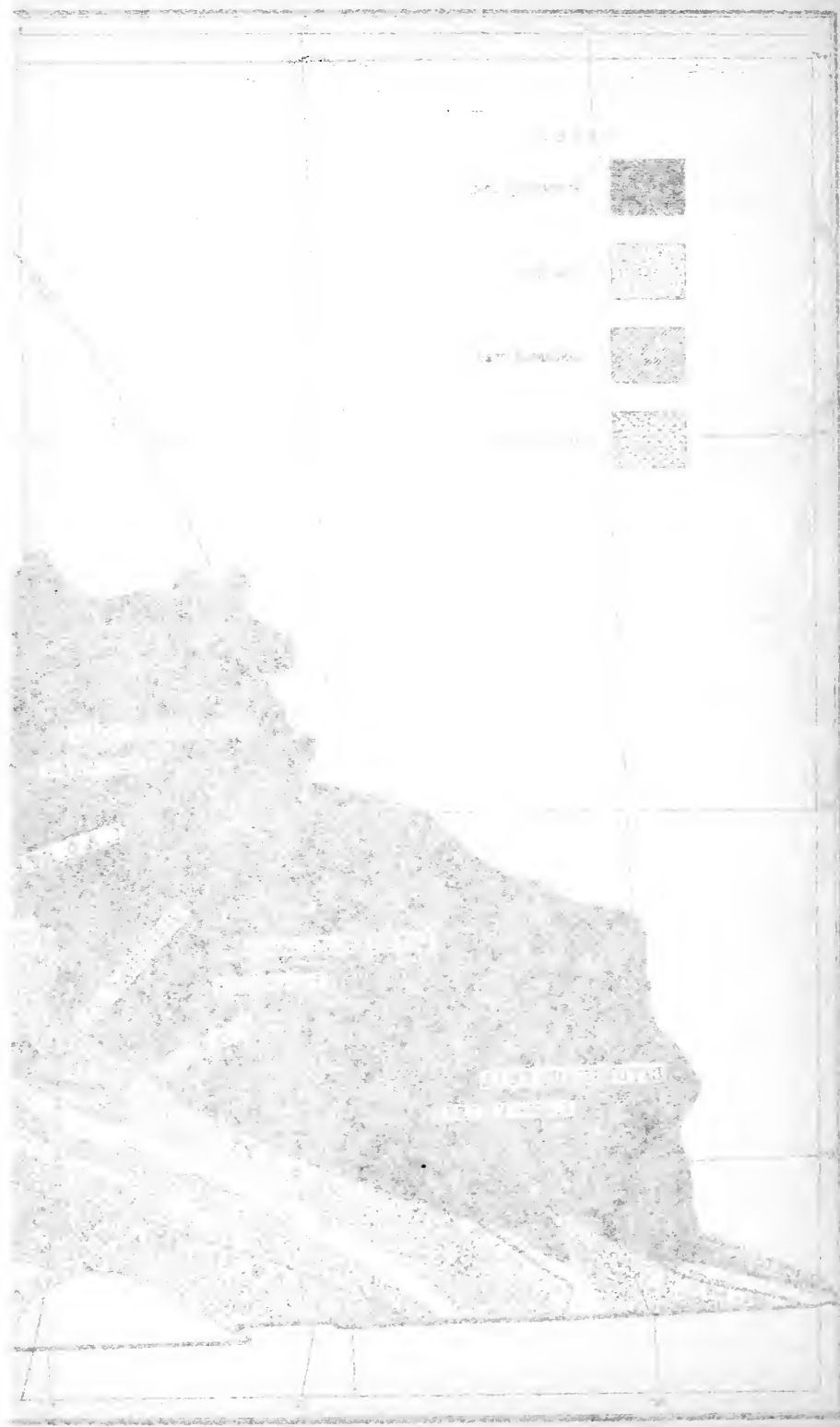




1916



BUREAU OF APPLIED ECONOMIC  
Southern Bldg., Washington



In 1913 there were 1,303,603 tones of coke produced in Virginia, and 2,472,752 tons in West Virginia. During this year the Norfolk and Western Railway alone handled 1,280,638 net tons of Pocahontas coke, which is sufficient evidence that Petersburg has an adequate coke as well as an adequate, dependable coal supply sufficient for all industrial purposes. The success with which the duPont works at Hopewell have been able to secure between 2,000 and 5,000 tons of coal a day during the past two years corroborates this assertion.

### *Price of Coal*

In consequence of the cheap natural conditions of mining in the Pocahontas and New River districts, the large scale of production, and the modern methods of mining, together with the low freight rates to Petersburg, the price of these superb coals in the Petersburg-Hopewell area is remarkably low. For industrial purposes, number 3 bed Pocahontas or Sewell bed New River coal is delivered f. o. b. sidings at Petersburg, Hopewell or City Point at \$2.75 per net ton. The price of these coals at the mines is \$1.25 per net ton; while the freight rate to Petersburg, Hopewell or City Point from the Chesapeake and Ohio and the Virginia mines, as well as from the Norfolk and Western mines, is the same as the rate to Richmond and Norfolk—\$1.50 per net ton. The freight rate on export shipments is even lower, being \$1.35 per gross ton.

The following table shows the freight rates on coal and coke from the Pocahontas and New River mines to Petersburg, compared with the rates to Richmond and Norfolk, Virginia; Raleigh and Wilmington, North Carolina; Charleston, South Carolina; Gary, Indiana, and Chicago, Illinois.

TABLE 15.—*Carload freight rates on coal and coke from the Pocahontas and New River mines to Petersburg, compared with designated points\**

From mines to—	Rate	
	Coal (Per net ton)	Coke (Per net ton)
PETERSBURG.....	\$1.50	\$2.00
Richmond, Va.....	1.50	2.00
Norfolk, Va.....	1.50	2.00
Raleigh, N. C.....	2.20	2.30
Wilmington, N. C.....	2.05	2.45
Charleston, S. C.....	2.15	2.50
Gary, Ind.....	2.05	2.50
Chicago, Ill.....	2.05	2.50

\*Rates furnished by the Traffic Department, Norfolk and Western Railway Company, December 7, 1916.

An illustration of the relatively low price of the Pocahontas and New River coals is furnished by the 1917 naval contracts. The United States Navy has awarded contracts for 750,000 tons of Pocahontas and New River coal to be delivered at Hampton Roads during this year at prices ranging from \$2.58 to \$2.85 per ton, for instance, as against less than 125,000 tons of Pennsylvania coal which is to be delivered at Northern ports at prices that range between \$3.02 to \$3.40 a ton.

The retail prices charged for bituminous and anthracite coal at Petersburg in 1914, 1915 and 1916 are shown in the following table:

TABLE 16.—*Retail prices of coal at Petersburg on January 15, 1914, 1915 and 1916\**

		Bituminous (Price per net ton)			Anthracite (Price per net ton)	
		Lump, egg, and nut	Run of mine	Splint	Stone	Chestnut
Jan. 15th.—						
1916	Ton.....	\$6.00	\$4.00†	\$6.00‡	\$8.00	\$8.00
	Half-ton.....	3.10	2.10	3.10	4.10	4.10
1915	Ton.....	6.00	4.00†	6.00‡	8.00	8.00
	Half-ton.....	3.10	2.10	3.10	4.10	4.10
1914	Ton.....	6.00	4.00†	6.00‡	8.00	8.00
	Half-ton.....	3.10	2.10	3.10	4.10	4.10

\*Prices furnished by Jackson Coal and Coke Company of Petersburg.

‡\$3.75 per ton in 10-ton lots.

†During the summer months splint sold for \$5.00 a ton.

*Comparative Quality of Pocahontas and New River Coal*

Typical analyses of Pocahontas and New River coals and of the Chesterfield coal, compared with typical analyses of Pennsylvania and Alabama coals are presented in the following table:

TABLE 17.—*Typical analyses of Pocahontas, New River and Chesterfield coals available at Petersburg, compared with typical analyses of Pennsylvania and Alabama coals\**

<i>Compound</i>	<i>Pocahontas (Number 3 bed)</i>	<i>New River (Sevell bed)</i>	<i>Chesterfield (Carbon Hill, C bed)</i>	<i>Pennsylvania (Pittsburgh bed)</i>	<i>Alabama (Jefferson bed)</i>
Moisture.....	2.82	2.89	2.81	3.34	1.95
Volatile matter.....	17.76	25.61	25.70	35.16	30.66
Fixed carbon.....	74.95	69.18	62.47	56.91	60.04
Ash.....	4.56	2.32	9.02	4.59	7.35
Sulphur.....	.49	.55	1.43	1.42	2.75
British thermal units.....	14,573	14,796	13,493	13,975	13,963

\*Compiled from "Analyses of Mine and Car Samples of Coal Collected in the Fiscal Years 1911 to 1913," United States Bureau of Mines, 1914.

While the quality of the Pocahontas and New River coals varies from mine to mine with different methods of preparation, the analyses of these coals in the above table are typical of the better grades of commercial shipments. Pocahontas or New River coal can be had of still higher quality, if desired, having less moisture and ash and containing 15,000 British thermal units to the pound.

The significance of these figures is apparent upon a brief consideration of their meaning and in comparison with similar figures for other coals.

Moisture, for example, is objectionable in coal because water in any fuel interferes with its burning. A dry coal is the more desirable. The superiority of Pocahontas and New River coals in this important respect is evident from the fact that the Hocking coal of

Ohio contains from 7 per cent to 10 per cent of water; while the Illinois coals, which are shipped into Chicago, contain from 8 per cent to 15 per cent of moisture.

The volatile matter in coal is the gaseous, smoky portion. It is an important element in heating value, but is less important than the fixed carbon. In ordinary boiler practice more or less of the volatile hydro-carbons are not burned, but are sent up the smoke stack and lost. For practical steam purposes, therefore, better values are obtained when low volatile coals are bought. Pocahontas and New River are such coals. The Pittsburgh, Birmingham and Church Valley coals contain almost twice as much volatile matter as Pocahontas and New River coals, while the Ohio, Indiana and Illinois coals contains still more.

Carbon is a prime element of value in coal, and a high percentage of fixed carbon, such as is contained in the Pocahontas and New River coals, is evidence of special excellence for steam and power purposes. The relative superiority of these coals is indicated by the fact that the better Alabama coals have only 55 per cent to 65 per cent of fixed carbon, the Church Valley coals from 55 per cent to 60 per cent, the Fairmont and Pittsburgh coals from 55 per cent to 62 per cent, the Ohio coals from 45 per cent to 55 per cent, and the Illinois and Indiana coals only from 45 per cent to 52 per cent. The Pocahontas and New River coals have from 65 per cent to 77 per cent of carbon.

Sulphur and ash do not burn and hence detract from the value of a coal. Sulphur in combination with other elements is one of the causes of clinkering on the grate bars. The ashes are the residue that must be shoveled out after the coal is burned. Therefore, the less of these elements the better. Pocahontas and New River are exceptionally good coals in these respects. In com-

parison with their 2 to 5 per cent of ash and less than 1 per cent of sulphur, the Alabama coals contain 5 per cent to 8 per cent of ash and 1 to 3 per cent of sulphur; the Pennsylvania coals 4 to 6 per cent of ash and 1 to 2 per cent of sulphur; the Hocking coals 5 to 6 per cent of ash and 1 to 2 per cent of sulphur; and the best of the Illinois coals contain 7 per cent of ash and from 1 to 3 per cent of sulphur.

The heating value of coal is measured in British thermal units, abbreviated B. T. U. A British thermal unit is the amount of heat needed to raise the temperature of one pound of water one degree Fahrenheit, when the water is at its greatest density. Pocahontas and New River coals contain from 300 to 500 more British thermal units per pound than any other coals in the United States. When this fact is considered in connection with the extremely low price at which these coals can be bought at Petersburg, the relative industrial advantage of a location in the Petersburg-Hopewell area, with regard to fuel, is apparent.

## XV. ADVANTAGES FOR DEVELOPMENT OF IRON AND STEEL INDUSTRY

The advantages which the Petersburg-Hopewell area possesses for the successful development of a large iron and steel industry may be summarized as follows:

1. An easily defended and strategic geographical location on a navigable fresh-water tributary of Chesapeake bay, in line with the future tendency of the American iron and steel industry to concentrate along the Atlantic seaboard.

2. Unexcelled railroad and deep-water transportation facilities, with relatively low freight rates.

3. An unlimited supply of cheap, highest grade fuel.

4. Cheap and abundant hydro-electric power.

5. A protected supply of domestic iron, nickel and manganese ores, pig iron, and fluxing materials, with easy access to the foreign ores and other required materials.

6. Adequate local banking facilities.

7. An inexhaustible supply of pure water.

8. An adequate available labor supply.

9. An unsurpassed climate with good natural health conditions.

10. An abundant, nearby food supply.

### *Future Development of the American Iron and Steel Industry*

In the future, the American iron and steel industry will have its greatest development along the Atlantic seaboard at points on tidewater where domestic high-grade, cheap coal and coke and the high-grade Cuban, West Indian, South American and Canadian iron ores can be brought together. The beginning of this development already is under way on a large scale at Baltimore

and Philadelphia, where millions of tons of Cuban and South American ores are now imported annually. The larger American steel companies are endeavoring to acquire all available iron ore deposits in Cuba, Chile and Brazil, in order that they may be able to care for the demands of their plants in meeting after-the-war competition in the world markets. These ores will come to our Atlantic coal ports because it costs more to move the coal to the iron than it does to bring the ores to meet our fuels. Just as Cuban ores now are being brought to Baltimore and Philadelphia, and as Spanish ores are taken to England, so will the ores from all of these accessible foreign non-coal areas eventually come into use at points along our Atlantic coast where cheap fuel is available.

It is thus not as unreasonable as it may at first seem to expect a large iron and steel industry eventually to develop along the James river and around Hampton Roads. With the same fuel supply available but with the additional advantages of an abundant supply of fresh water and a better climate, the Petersburg-Hopewell area along the upper James and the Appomattox, however, offers the greater inducements for a location in this region. A great iron and steel industry can be developed in the Petersburg-Hopewell area just as the great steel works have been built along the southern shores of the Great Lakes where the Lake Superior ores come down to meet the coal and coke from Pennsylvania, West Virginia, Ohio and Illinois.

#### *Available Iron Ores*

In addition to possessing easy access to the high-grade, cheap Pocahontas and New River coals, Petersburg also is strategically located with regard both to the domestic and the foreign iron ore deposits. Virginia, West Virginia, Kentucky and Tennessee ores<sup>66</sup> are easily

<sup>66</sup>See map 13, between pp. 90 and 91.

available via the Norfolk and Western and the other two coal roads that follow the James to tidewater; while the Cuban, West Indian, South American and Canadian ores can be obtained by water at a very low cost.

Approximately 500,000 tons of iron ore are mined annually in Virginia, of which about 20 per cent is high-grade hematite. The combined average annual production of hematite in Virginia, Kentucky and Tennessee is between 300,000 and 400,000 gross tons. In 1913 the average price for Virginia hematite was \$1.68 per gross ton, as compared with an average price of \$2.21 for Minnesota hematite. The average price for both Virginia and Minnesota hematite in 1914 was \$1.74 per gross ton.<sup>67</sup>

The imports of iron ore into the United States in 1913 amounted to 2,594,770 gross tons, valued at \$8,336,819. These imports of ore in 1913, by countries, were as follows:<sup>68</sup>

<i>Country</i>	<i>Gross tons</i>
Cuba. . . . .	1,635,622
Newfoundland, Labrador and Canada. . . . .	393,328
Sweden. . . . .	356,074
Spain. . . . .	112,580
Venezuela. . . . .	57,225
All other countries. . . . .	39,941
Total. . . . .	2,594,770

Of this total amount of ore imported in 1913, about 2,470,000 tons were entered at Baltimore and Philadelphia. These ores are as accessible to the Petersburg-Hopewell area as they are to Baltimore and Philadelphia and can be drawn upon to supply a local iron and steel industry.

### *Pig Iron Supply*

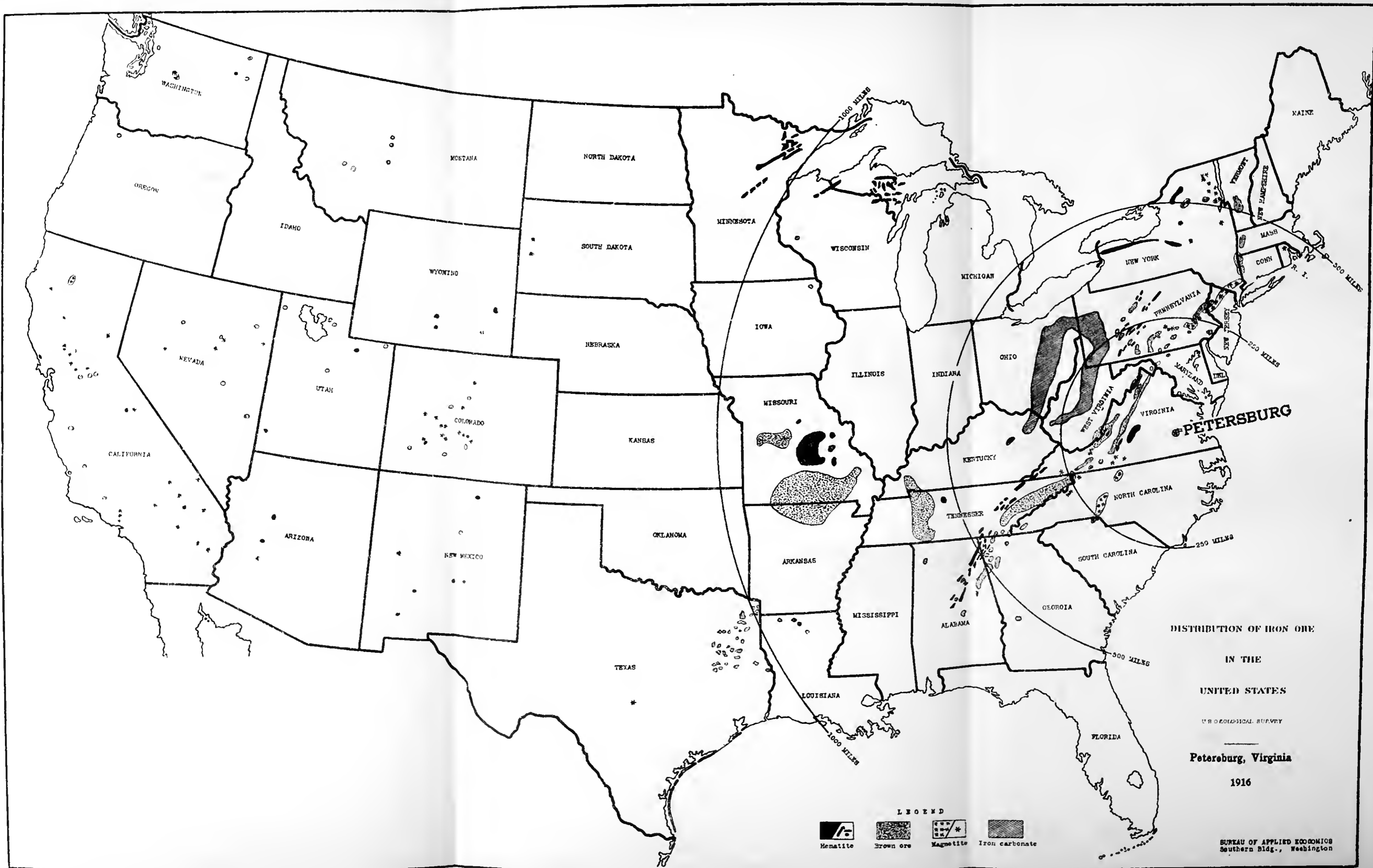
Virginia alone produced a total of 341,815 gross tons of pig iron, all grades, in 1913; while the combined pro-

<sup>67</sup>Compiled from "The Production of Iron Ore, Pig Iron, and Steel in 1914," by Ernest F. Burchard (United States Geological Survey), pp. 486 and 492.

<sup>68</sup>*Ibid.*, p. 503.




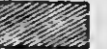






DISTRIBUTION OF IRON ORE  
IN THE  
UNITED STATES  
U.S. GEOLOGICAL SURVEY  
Petersburg, Virginia  
1916

LEGEND

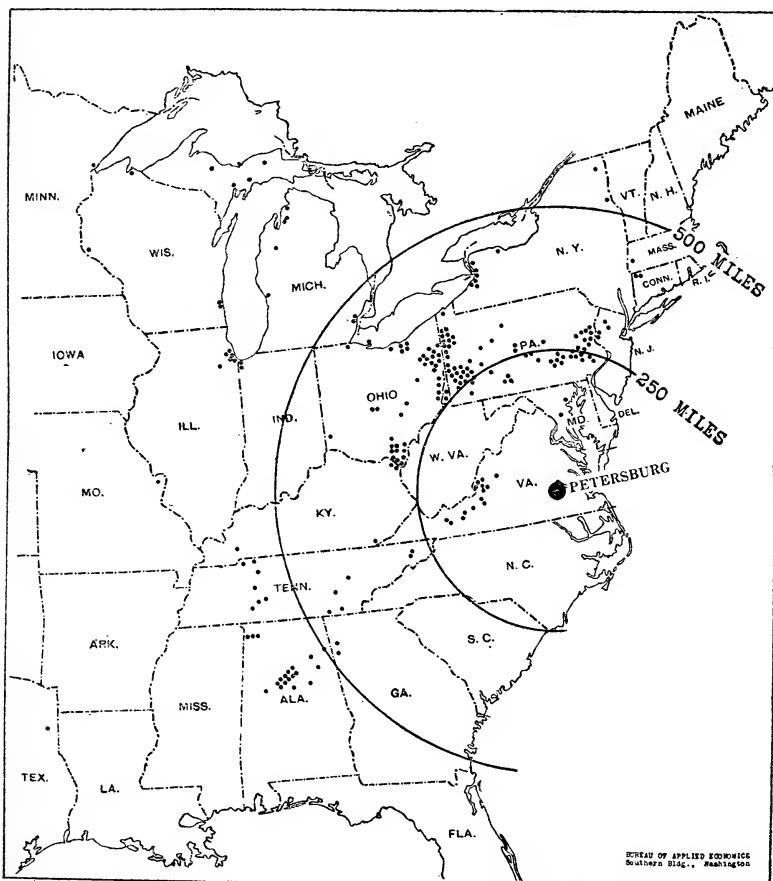
			
Hematite	Brown ore	Magnetite	Iron carbonate

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duction in Virginia and Tennessee in this year amounted to 622,356 gross tons. Virginia, Maryland, West Virginia, Kentucky and Tennessee, together, produced 583,795 gross tons of Bessemer and low-phosphorus pig iron in 1913. On December 31, 1913, 24 completed furnaces were reported in Virginia, of which 9 were in blast on June 30.<sup>69</sup> Map 14, which follows, shows the location of blast furnaces in the United States, according to the thirteenth census.



MAP 14.—Geographical location of Petersburg with reference to the location of blast furnaces in the United States, according to the Thirteenth Census, 1910

<sup>69</sup>Compiled from "Annual Statistical Report of the American Iron and Steel Institute for 1913" (Philadelphia), pp. 3, 9, 25 and 27.

An enormous amount of heavy-melting scrap iron, sufficient to supply the needs of the largest establishments, can be assembled easily at Petersburg. By water from the great cities bordering on Chesapeake bay, and from the railroads, a large annual supply of scrap iron is available for use in the local Petersburg-Hopewell area.<sup>70</sup>

In view of the character of the Petersburg fuel supply it is interesting to note in this connection that approximately 98 per cent of the total pig iron production of the United States (30,966,152 gross tons in 1913) is now made with bituminous coke.<sup>71</sup>

The following table shows the carload freight rate on pig iron from Virginia furnaces, based on Buena Vista, Roanoke and Pulaski, to Petersburg, compared with the rates to Richmond and Norfolk, Virginia; Baltimore, Maryland; Wilmington, North Carolina; and Charleston, South Carolina.

Table 18.—*Carload freight rates on pig iron from Virginia furnaces, based on Buena Vista, Roanoke and Pulaski, to Petersburg, compared with designated points\**

<i>From furnaces to—</i>	<i>Rate (Per gross ton)</i>
PETERSBURG . . . . .	\$1.50
Richmond, Va. . . . .	1.50
Norfolk, Va. . . . .	1.60
Baltimore, Md. . . . .	2.25
Wilmington, N. C. . . . .	2.64
Charleston, S. C. . . . .	3.54

\*Rates furnished by the Traffic Department, Norfolk and Western Railway Company, December 7, 1916.

### *Limestone and Fluorspar*

An inexhaustible supply of limestone<sup>72</sup> is available in Virginia, easily accessible to Petersburg at low freight

<sup>70</sup>See map 1, between pp. 8 and 9.

<sup>71</sup>Compiled from "Annual Statistical Report of the American Iron and Steel Institute for 1913" (Philadelphia), p. 14.

<sup>72</sup>See map 12, between pp. 82 and 83.

rates via the Norfolk and Western Railway; while the high-grade Kentucky fluorspar deposits also are within relatively easy reach. Limestone and fluorspar form the base of the flux materials required in the manufacture of steel.

The fluorspar used in the American steel industry comes principally from Kentucky and Illinois, and from England. In 1913, for example, 22,682 net tons of spar were imported from England as against a domestic production of 115,580 net tons.

The domestic production in 1915 increased to 136,941 tons, of which Kentucky and Illinois together produced 135,559 tons, valued at \$753,913.<sup>73</sup>

### *Manganese*

With regard to the domestic supply of manganese, Petersburg is most advantageously situated. Virginia manganese mines, located along the lines of the Norfolk and Western Railway, supplied practically all of the domestic manganese mined in the United States prior to the European war. In 1915, during which year the Russian and Indian supply was cut off by the war, Virginia and Georgia together produced the bulk of the domestic output.

The American supply of manganese ores is principally imported, however, as is shown by the following table:

Table 19.—*Domestic production of manganese ores in the United States in 1913 and 1915, compared with the amount of manganese ores imported\**

Year	Domestic production (Gross tons)	Imports (Gross tons)
1913. . . . .	4,048	345,090
1915. . . . .	9,709	313,985

\*Compiled from "Manganese and Manganiferous Ores in 1915," by D. F. Hewett (United States Geological Survey), pp. 32-34.

<sup>73</sup>Compiled from "Fluorspar in 1915," by Ernest F. Burchard (United States Geological Survey), pp. 35 and 38.

In 1913 the United States imported 70,200 tons of manganese ores from Brazil, while practically all of the rest of the imports came from Russia and British India. Because of the European war no imports of manganese were received from Russia in 1915, only 36,450 tons came from British India, while the imports from Brazil, however, jumped to 268,786 gross tons. As the principal foreign deposits of manganese are in Brazil, Cuba, India, Newfoundland, Panama and Russia they are as accessible to Petersburg as to any other American port.

Prior to the European war the American steel industry depended very largely on the steel industries of England, France and Germany for ferromanganese, which was made principally from imported Indian and Brazilian manganese ores. In 1915, however, the United States produced 144,260 gross tons of ferromanganese and only imported 55,263 tons—which came from England. American steel plants also produced practically all of the spiegeleisen used in our domestic industries in 1915—the domestic production in this year being 114,556 gross tons, as against total imports of only 200 tons.<sup>74</sup>

#### *Nickel and Other Materials*

In Floyd county, Virginia, are important nickel deposits. While these deposits have not as yet been commercially operated, they nevertheless constitute a local domestic nickel supply that can be utilized at Petersburg. It also is significant with regard to the development of an iron and steel industry at Petersburg that the Cuban iron ores, when refined, contain approximately one per cent of metallic nickel.<sup>75</sup>

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<sup>74</sup>Compiled from "Manangese and Manganiferous Ores in 1915," by D. F. Hewett (United States Geological Survey), pp. 36-38.

<sup>75</sup>Analyses of eastern Cuban iron ores, taken from the Mayari and Moa mines, show that surface ores contain .38 of one per cent nickel and cobalt, while the ores from a depth of about 25 feet contain as much as 1.8 per cent of these metals. These ores also contain .93 of one per cent of chromium at the surface and as much as 2.51 per cent at a depth of from 19 to 20 feet.

The present nickel supply of the United States depends almost entirely on the Canadian deposits, which are located near Sudbury, Ontario. Other sources are the by-product nickel produced by the copper smelters in New Jersey—possibly 800 tons of metallic nickel are produced annually in this way; the by-product nickel from the lead smelters in Missouri; the Pennsylvania deposits—the Cornwall mines in Lebanon county produce about 100 tons of metallic nickel a year; and the deposits in Virginia, Idaho, Washington and Nevada.

The Canadian deposits are controlled by the International Nickel Company, and produce enough ore annually to make about 20,000 tons of metallic nickel. This ore is reduced to a matte at the mines, containing about 70 per cent nickel, in which form it is imported into the United States free of duty. These imports are refined at Bayonne, New Jersey. The International Nickel Company sells the refined product at from 35 to 50 cents a pound.<sup>76</sup>

Electro-ferrosilicon also is available at Petersburg from the plants of the Electro-Metallurgical Company at Holcombs Rock, Virginia, and at Glen Ferris, West Virginia. The world's supply of ferrochrome, which is made chiefly from chromite ores secured in New Caledonia, South Africa and Canada, is controlled by the Electro-Metallurgical Company at Niagara Falls.

Copper and zinc also can be obtained at Petersburg in large quantities from the nearby smelters in New Jersey; while the Mexican, South American and Spanish copper ores can be imported at low cost.

In fact, all the raw materials required for the development of a large iron and steel industry can be obtained as easily at Petersburg as at any city on the Atlantic seaboard.

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<sup>76</sup>The Sudbury mines are operated by the International Nickel Company under the name of the Canadian Copper Company; while the refineries at Bayonne are operated under the name of the Orford Copper Company.

## XVI. FREIGHT RATES AND DISTRIBUTING BUSINESS

Advantageous freight rates have made it possible to build up an extensive distributing business at Petersburg with the central and eastern cities in North and South Carolina. By virtue of its deep-water transportation facilities, Petersburg has favorable freight rates from the North; and as a participant in the "Virginia cities" rates, can secure goods from the Middle West as cheaply as they can be received at any point on the Atlantic seaboard. Goods assembled at Petersburg from the North and Middle West under these favorable tariffs can be forwarded to North and South Carolina as cheaply as from Richmond; and to such points in North Carolina as Rocky Mount, Washington and Newbern, goods can be shipped more cheaply than from Lynchburg and Roanoke. The class rates from Petersburg to Rocky Mount, Raleigh, Durham, Fayetteville, Washington, Goldsboro and Wilmington, North Carolina; and to Florence, Sumter, Georgetown and Charleston, South Carolina, for instance, are the same as from Richmond and Norfolk.<sup>77</sup>

In 1915, for example, the combined freight received over the Norfolk and Western, Atlantic Coast Line and Seaboard Air Line railroads at Petersburg, exclusive of Hopewell and City Point, amounted to 835,313 net tons; while the total amount forwarded was 309,980 net tons.

Prior to June, 1914, the class rates to North Carolina points from the so-called middle western gateways at Cincinnati and Louisville were made up of the class rates to Virginia cities plus the local rate from these cities to North Carolina. Under a ruling of the Inter-

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<sup>77</sup>Rates with which these comparisons were made were furnished by the General Development Agent, Seaboard Air Line Railway Company, December 14, 1916.

state Commerce Commission of June 29, 1916, the through rates from the Middle West to North Carolina points were made from 4 to 11 cents lower than the combined rates to the Virginia cities plus the local rates charged for goods reshipped to North Carolina. Petersburg jobbers, however, still can secure flour, grain, mill-feed and similar products from the Middle West, under what are termed "transit tariffs," and reship them to retail merchants in North Carolina as cheaply as the goods can be secured direct.

On goods shipped north, Petersburg has a decided advantage over the North Carolina cities; and to such points as Baltimore, Philadelphia and New York the Petersburg rates are considerably lower than from Lynchburg, for instance, and the same as from Richmond, except that Richmond has slightly lower rates to Baltimore. Class rates from Petersburg to Baltimore, Philadelphia and New York, compared with those from Richmond and Lynchburg, Virginia; and from Raleigh, Wilmington and Charlotte, North Carolina, are shown in the table which follows.

TABLE 20.—Class freight rates from Petersburg to Baltimore, Philadelphia and New York, compared with Richmond, Lynchburg and specified North Carolina points\*

From—	In cents per 100 pounds									
	1	2	3	4	5	6	A	B	C	D
PETERSBURG.....	36	31	26	22	18	15	15	18	15	15
Richmond, Va.....	31	26	23	19	16	13	13	16	13	13
Lynchburg, Va.....	54.6	47.3	37.3	25.2	21	16.8	16.8	21	16.8	16.8
Raleigh, N. C.....	90	77	64	51	43	33	29	34	33	30
Wilmington, N. C.....	69	56	49	40	30	21	19	19	19	18
Charlotte, N. C.....	97	84	70	57	48	37	30	36	35	32
TO BALTIMORE										
PETERSBURG.....	42	36	31	26	20	17	17	20	17	17
Richmond, Va.....	42	36	31	26	20	17	17	20	17	17
Lynchburg, Va.....	56.7	49.4	39.9	26.3	23.1	18.9	18.9	23.1	18.9	18.9
Raleigh, N. C.....	96	83	70	55	47	37	33	38	37	34
Wilmington, N. C.....	75	62	52	44	34	24	21	21	21	19
Charlotte, N. C.....	103	90	76	61	52	41	34	40	39	36
TO PHILADELPHIA										
PETERSBURG.....	42	36	31	26	20	17	17	20	17	17
Richmond, Va.....	42	36	31	26	20	17	17	20	17	17
Lynchburg, Va.....	56.7	49.4	39.9	26.3	23.1	18.9	18.9	23.1	18.9	18.9
Raleigh, N. C.....	96	83	70	55	47	37	33	38	37	34
Wilmington, N. C.....	75	62	52	44	34	24	21	21	21	19
Charlotte, N. C.....	103	90	76	61	52	41	34	40	39	36
TO NEW YORK										
PETERSBURG.....	42	36	31	26	20	17	17	20	17	17
Richmond, Va.....	42	36	31	26	20	17	17	20	17	17
Lynchburg, Va.....	56.7	49.4	39.9	26.3	23.1	18.9	18.9	23.1	18.9	18.9
Raleigh, N. C.....	96	83	70	55	47	37	33	38	37	34
Wilmington, N. C.....	75	62	52	44	34	24	21	21	21	19
Charlotte, N. C.....	103	90	76	61	52	41	34	40	39	36

\*Rates furnished by the Traffic Department, Norfolk and Western Railway Company, December 7, 1916.

*Factors Regulating Rates*

The reason why Petersburg has the advantage of such relatively low freight rates is found in the fact that New York, Philadelphia, Baltimore and Norfolk are served from Chicago, Columbus, Cincinnati and points in the central west by different lines of railway. During the early years of our national commercial expansion, these different lines competed for traffic to all these Atlantic seaboard points. Freight would be carried, for instance, from Chicago to New York and from there to Norfolk or Baltimore by water, and, conversely, it might go by rail from Chicago to Norfolk and from there to New York by ship.

The final result of this intense competition for business from the Middle West to the Atlantic seaports was an arrangement by which a certain relation of rates was established between the different ports. Taking New York as the base, the rates to Philadelphia were made 2 cents and those to Baltimore and Norfolk 3 cents lower. While this adjustment, made many years ago, has been somewhat modified as to export grain and grain products, it still regulates domestic rates.

Petersburg acquired the low Norfolk rate by virtue of the market competition existing between the Virginia cities and Baltimore, for Petersburg, Richmond, Lynchburg, Norfolk and other Virginia cities actively compete for wholesale business in surrounding territory with the Maryland city. If this business is done through Baltimore the freight may reach that point by the Baltimore and Ohio but not by the Chesapeake and Ohio; while, upon the other hand, if the business is handled from one of the Virginia cities, the goods may be brought there over the Chesapeake and Ohio but not by the Baltimore and Ohio. Since the ability of these different centers to job into intermediate territory depends upon the

relative freight rates at which supplies can be obtained, the Chesapeake and Ohio has insisted that rates from the West to the Virginia cities shall not be higher than to Baltimore. The most westerly of the Virginia cities served by the Chesapeake and Ohio is Lynchburg, which for many years has been accorded by the Chesapeake and Ohio the Baltimore rate, which is the same as that to Norfolk, and which is generally known as the "Virginia cities" rate.

The Norfolk and Western, in competition with the Chesapeake and Ohio at Lynchburg, also had to apply the Norfolk rate at this point, and as it could not charge higher rates to Petersburg than were charged to Norfolk, under the Federal act to regulate commerce—Petersburg being on its main line between Lynchburg and Norfolk—Petersburg obtained the Virginia cities rates.<sup>78</sup>

### *Wholesale Business*

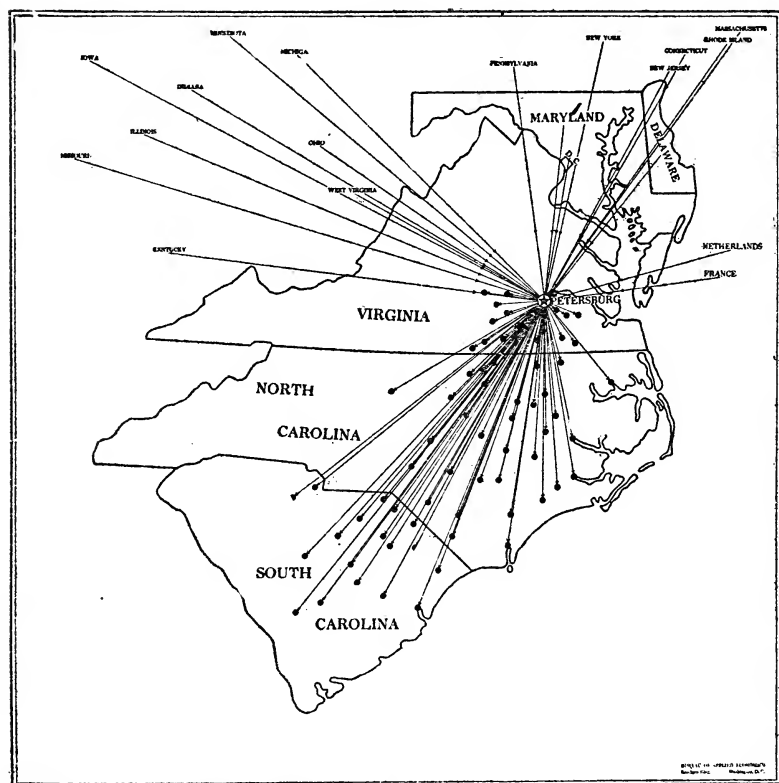
With about 50 wholesale and distributing houses, Petersburg's annual wholesale business approximately amounts to \$10,000,000. The principal lines include groceries, dry goods and notions, shoes, hay, grain and feed stuffs, hardware, lumber and building materials, coal, agricultural implements, machinery and mill supplies, confectioneries, drugs, paints and oils and fire-works.

Petersburg's local trade territory in the Southside Virginia counties is shown on map 16, page 110, while the location of the principal communities in Virginia, North Carolina and South Carolina to which Petersburg distributes goods, together with the States from which

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<sup>78</sup>This statement of the Virginia cities rates is based on the report of the Interstate Commerce Commission in the case of the Bluefield Shippers' Association v. Norfolk and Western Railway Company Et Al (No. 3753), decided February 13, 1912, pp. 521-524.

Petersburg principally secures its supplies, are shown on map 15, which follows.



MAP 15.—General trade territory of Petersburg, showing location of the principal communities in Virginia, North Carolina and South Carolina to which goods are distributed and the States from which goods principally are secured, 1916

## XVII. BANKING FACILITIES

With two National and two State banks reporting on March 7, 1916,<sup>79</sup> the combined local bank resources at Petersburg on this date amounted to nearly \$13,000,000. Including the Hopewell and City Point banks the aggregate local bank resources on this date amounted to about \$13,600,000. A total of approximately \$100,000,000 of bank resources are available in the combined Petersburg-Hopewell and Richmond district.

### *Recent Growth of Banks*

Between March 4, 1914, and March 7, 1916, the combined resources of the four Petersburg banks increased nearly 45 per cent. The deposits increased during this period nearly 66 per cent. For the year ending March 7, 1916, the banks of Virginia reported an increase in undivided profits equal to 5.5 per cent of their combined capital. The Petersburg banks showed an increase equal to nearly 16 per cent of their combined capital.

The postal savings deposits at the Petersburg post-office increased from \$8,710 on March 31, 1915, to \$173,186 on March 31, 1916—an increase of more than 1,888 per cent in one year. The net deposits increased during this period more than 1,683 per cent.

The following table shows the combined financial condition of the Petersburg banks on March 7, 1916, March 4, 1915, and March 4, 1914, and the general increase of combined resources in 1916 as compared with 1914.

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<sup>79</sup>The National Bank of Petersburg; Virginia National Bank; American Bank and Trust Company, Inc.; and the Petersburg Savings and Insurance Company. Another State institution, The Banking Trust and Mortgage Company, with a capital of \$500,000, also has been organized recently at Petersburg.

# BANKING FACILITIES

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TABLE 21.—Combined financial condition of the State and National banks at Petersburg on March 7, 1916, March 4, 1915, and March 4, 1914\*

Item	March 7, 1916	March 4, 1915	March 4, 1914	Increase, 1914-1916	
				Amount	Per cent
<i>Resources</i>					
Loans and discounts.....	\$ 9,486,495.04	\$ 6,948,676.78	\$ 6,441,688.57	\$ 3,044,806.47	47.27
Overdrafts.....	10,682.79	1,970.42	3,568.94	7,113.85	199.33
Bonds and investments.....	877,993.71	861,610.03	836,929.87	41,063.84	4.91
Banking house, furniture and fixtures...	200,390.06	177,903.81	178,013.81	22,376.25	12.57
Cash and in banks.....	2,370,532.29	1,135,669.58	1,487,142.32	883,389.97	59.40
Total resources.....	\$12,946,093.89	\$ 9,125,830.62	\$ 8,947,343.51	\$ 3,998,750.38	44.69
<i>Liabilities</i>					
Capital.....	\$ 900,000.00	\$ 900,000.00	\$ 900,000.00	.....	.....
Surplus and profits.....	1,349,074.83	1,206,753.53	1,138,831.60	\$ 210,243.23	18.46
Circulation.....	499,997.50	589,997.50	499,997.50	.....	.....
Re-discounts.....	.....	294,300.00	235,007.50	.....	.....
Bonds borrowed.....	3,000.00	23,000.00	9,000.00	—235,007.50	—100.00
Reserved for interest and taxes.....	86,576.31	68,182.20	64,415.29	—6,000.00	—66.67
Deposits—banks and individuals.....	10,107,445.25	6,043,597.39	6,100,091.62	22,161.02	34.40
Total liabilities.....	\$12,946,093.89	\$ 9,125,830.62	\$ 8,947,343.51	4,007,353.63	65.69
				\$ 3,998,750.38	44.69

\*Compiled from the published returns made by the two State and two National banks at Petersburg to the Comptroller's calls of March 4, 1914, March 4, 1915, and March 7, 1916 (reports of the State banks are made to the State Corporation Commission).

The increase of postal savings deposits and the general growth of business at the Petersburg postoffice for the year ending March 31, 1916, as compared with the year ending March 31, 1915, is shown in the table which follows.

TABLE 22.—*Increase of business at the Petersburg postoffice for the year ending March 31, 1916, as compared with the year ending March 31, 1915\**

<i>Item</i>	<i>Year ending March 31, 1916</i>	<i>Year ending March 31, 1915</i>	<i>Per cent of increase, 1915-1916</i>
Total amount of stamp and stamped paper sales.....	\$ 111,334	\$ 94,231	18
Money orders:			
Total amount of orders issued.....	\$ 668,054	\$134,203	398
Domestic.....	\$ 589,716	\$127,793	360
International.....	\$ 78,338	\$ 6,410	1120
Total number of orders issued.....	45,126	18,464	144
Amount of orders paid.....	\$ 303,604	\$507,718	—40
Number of orders paid.....	155,253	180,304	—14
Amount of funds received on money order account.....	\$1,260,201	\$220,313	472
Postal savings:			
Total amount of deposits.....	\$ 173,186	\$ 8,710	1888
Total amount of withdrawals.....	100,477	4,633	
Net deposits, or amount of deposits over withdrawals.....	\$ 72,709	\$ 4,077	1683
Total number of registry receipts issued, letters and parcels.....	23,737	9,632	146
Total number of parcel post packages insured.....	9,523	4,402	116

\*Compiled from the official records of the United States Postoffice at Petersburg.

In the next table the combined bank resources and the general financial condition of the banks at Petersburg, Hopewell and City Point, together with the Richmond banks, are shown in detail.

## BANKING FACILITIES

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TABLE 23.—Combined bank resources and general financial condition of the banks in the Petersburg-Hopewell area and at Richmond on March 7, 1916

Item	Combined Petersburg-Hopewell-City Point banks			Combined Richmond banks†	Combined total
	Petersburg banks*	Hopewell and City Point banks†	Aggregate		
<i>Resources</i>					
Loans and investments .....	\$10,575,562	\$ 409,873	\$10,985,435	\$67,124,959	\$ 78,110,394
Cash, clearing house exchange, and in banks .....	2,370,532	230,958	2,601,490	17,405,784	20,007,274
Miscellaneous .....		3,681	3,681	484,064	487,745
Total resources .....	\$12,946,094	\$ 644,512	\$13,590,606	\$85,014,807	\$ 98,605,413
<i>Liabilities</i>					
Capital .....	\$ 900,000	\$ 66,570	\$ 966,570	\$ 9,822,150	\$ 10,788,720
Surplus and profits, etc. ....	1,435,651	7,108	1,442,759	9,460,905	10,903,664
Circulation .....	499,998		499,998	3,466,200	3,966,198
Total deposits .....	10,107,445	570,404	10,677,849	60,285,089	70,962,938
Bond account .....	3,000		3,000	1,329,200	1,332,200
Bills payable and re-discounts .....				155,263	155,263
Miscellaneous .....		430		496,000	496,430
Total liabilities .....	\$12,946,094	\$ 644,512	\$13,590,606	\$85,014,807	\$ 98,605,413

\*Two National and two State banks. Compiled from published returns to the Comptroller's call of March 7, 1916 (State banks report to State Corporation Commission).

†Three State banks. Compiled from returns made to the State Corporation Commission of Virginia.

‡Eight National and eleven State banks. Compiled from published returns to the Comptroller's call of March 7, 1916 (State banks report to State Corporation Commission).

*Comparative Bank Resources*

The combined bank resources at Petersburg on March 7, 1916, amounted to \$536.58 per capita, being greater than the per capita resources of the Norfolk banks, and nearly four times as great as the per capita resources of Virginia. The following table shows the combined bank resources at Petersburg, compared with total bank resources of Virginia, and of Richmond and Norfolk on March 7, 1916.

TABLE 24.—*Combined State and National bank resources at Petersburg, compared with the total combined State and National bank resources of the State of Virginia, Richmond and Norfolk, on March 7, 1916*

City	Number of banks	Total combined bank resources March 7, 1916			Population 1910
		Amount	Per cent of State resources	Per capita	
State of Virginia...	415	\$281,137,398*	100.00	\$136.37	2,061,612
PETERSBURG...	4	12,946,094†	4.60	536.58	24,127
Richmond.....	19	85,014,806‡	30.24	666.11	127,628
Norfolk.....	14	35,577,182§	12.65	527.44	67,452

\*Compiled from "Statement Number 31," Banking Division, State Corporation Commission of Virginia.

†Statement furnished by Wallace D. Blanks, Cashier, American Bank and Trust Company, Petersburg.

‡Statement furnished by W. P. Shelton, Assistant Cashier, First National Bank, Richmond.

§Statement furnished by M. C. Ferebee, Assistant Cashier, The National Bank of Commerce, Norfolk, May 1, 1916.

*District Federal Reserve Bank*

The general financial condition of the district Federal reserve bank located at Richmond, compared with the combined condition of all the Federal reserve banks, at the close of business on March 3, 1916, is shown in the following table:

## BANKING FACILITIES

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TABLE 25.—*Financial condition of the Federal reserve bank at Richmond, compared with the combined financial condition of the twelve Federal reserve banks of the United States, at the close of business March 3, 1916\**

Item	Combined Federal reserve banks	Richmond Federal Reserve Bank	
		Amount	Per cent of total
<i>Resources</i>			
Gold coin and certificates in vault.	\$261,822,000	\$ 4,723,000	1.80
Gold settlement fund. ....	74,890,000	10,886,000	14.54
Gold redemption fund. ....	1,538,000	303,000	19.70
Total gold reserve. ....	338,250,000	15,912,000	4.70
Legal tender notes, silver, etc. ....	12,994,000	129,000	0.99
Total reserve. ....	351,244,000	16,041,000	4.57
Bills discounted—members. ....	21,715,000	6,316,000	29.09
Bills bought in open market. ....	30,783,000	176,000	0.57
Total bills on hand. ....	52,498,000	6,492,000	12.37
Investments: United States bonds	33,063,000	1,370,000	4.14
Municipal warrants.	30,539,000	81,000	0.27
Total earning assets. ....	116,100,000	7,943,000	6.84
Federal reserve notes—net. ....	25,567,000	.....	.....
Due from other Federal reserve banks—net. ....	20,576,000	1,601,000	7.78
All other resources. ....	5,969,000	86,000	1.44
Total resources. ....	\$519,456,000	\$ 25,671,000	4.94
<i>Liabilities</i>			
Capital paid in. ....	\$ 54,919,000	\$ 3,337,000	6.08
Government deposits. ....	36,043,000	6,808,000	18.89
Reserve deposits—net. ....	418,718,000	11,027,000	2.63
Federal reserve notes—net. ....	9,635,000	4,457,000	46.26
Due to other Federal reserve banks—net. ....	.....	.....	.....
All other liabilities. ....	141,000	42,000	29.79
Total liabilities. ....	\$519,456,000	\$ 25,671,000	4.94

\*Compiled from the weekly statement of the Federal Reserve Board, issued by the Bureau of Applied Economics, Washington, March 4, 1916, p. 2.

## XVIII. AGRICULTURAL RESOURCES

Petersburg for more than a hundred years has been an important agricultural market for tobacco, peanuts, cotton, corn and the other crops raised in the Southside Virginia counties and in the Carolinas. The city also has been for many years an important marketing center and consuming point for timber and forest products. Even prior to the building of the railroads, tobacco, cotton, corn and other agricultural products of North Carolina and South Carolina annually were brought hundreds of miles over country roads to be marketed here. The old plank roads still remembered in the Southside Virginia counties were built from Petersburg in various directions for long distances to provide for this early travel.

### *Agricultural Products Handled at Petersburg*

Approximately 50,000,000 pounds of leaf tobacco is handled at Petersburg annually,<sup>80</sup> while between 5,000,000 and 7,000,000 pounds annually are sold on the local warehouses. Between 3,000,000 and 3,500,000 bushels of peanuts are handled here each year.<sup>81</sup> From 10,000 to 15,000 bales of cotton are marketed through Petersburg each season;<sup>82</sup> while, including the present consumption of the duPont works at Hopewell, approximately 600,000 bales of cotton are consumed in the Petersburg-Hopewell area per annum. The Petersburg grist mills alone annually consume about 750,000 bushels of corn; while the local woodworking industries use between 65,000,000 and 75,000,000 feet of lumber a year.

### *Local Agricultural Products*

The combined annual value of the crops raised in the twelve Southside Virginia counties in Petersburg's

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<sup>80</sup>See map 9, p. 42; and map 16, p. 110.

<sup>81</sup>See map 10, p. 46; and map 16, p. 110.

<sup>82</sup>See map 11, p. 58; and map 16, p. 110.

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local trade territory is now about \$15,000,000. Tobacco, corn, peanuts, cotton, vegetables and hay are the most important crops in these counties, as is shown in the following table:

TABLE 26.—*Value of specified crops produced in the twelve southside Virginia counties in Petersburg's local trade territory in 1910\**

<i>Crop</i>	<i>Value</i>
Total all crops.....	\$12,773,067
Corn.....	2,871,886
Wheat.....	297,826
Oats.....	152,641
Hay and forage.....	805,601
Tobacco.....	2,655,196
Peanuts.....	2,015,000†
Cotton.....	412,489
Vegetables.....	1,256,573
Fruits and nuts.....	326,755
All other crops.....	1,979,100

\*Compiled from "Thirteenth Census of the United States, 1910," Vol. V, pp. 776-79.

†Approximation. The value of peanuts was not reported separately.

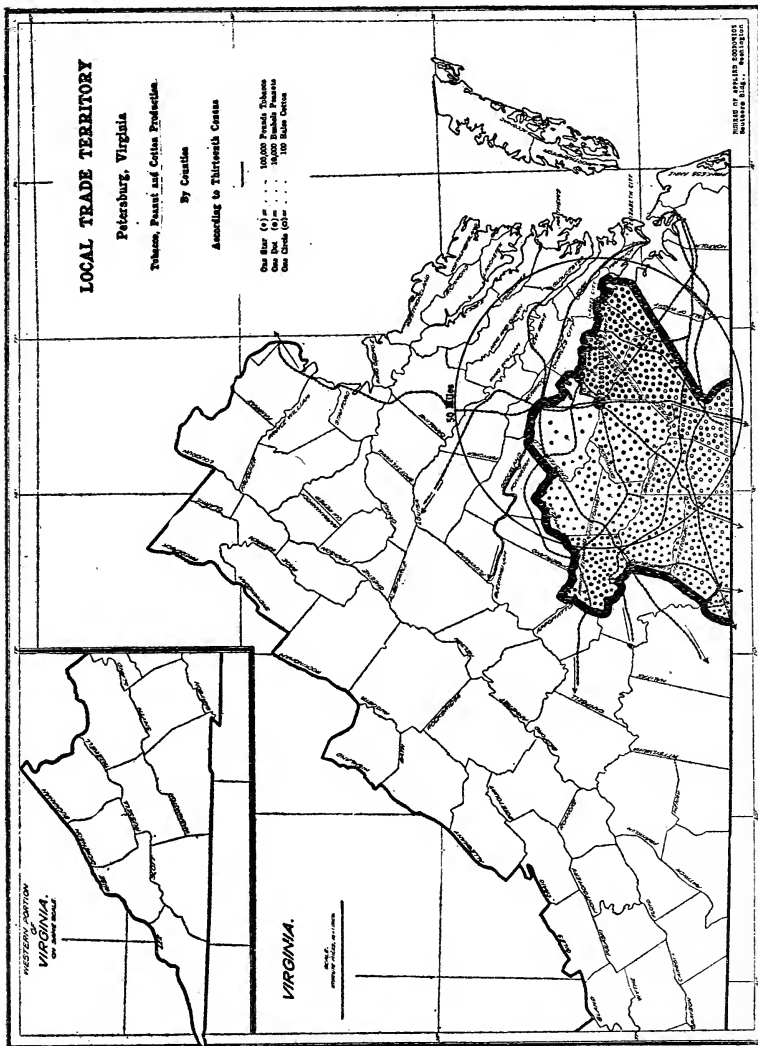
More than 30,000,000 pounds of tobacco, more than 3,000,000 bushels of corn, and more than 2,000,000 bushels of peanuts were produced in the Southside counties in 1909, according to the Thirteenth Census of the United States. The production of these crops in 1909, by counties, is shown in the table below.

TABLE 27.—*Production of corn, peanuts and tobacco in the twelve specified southside Virginia counties in Petersburg's local trade territory in 1910\**

<i>County</i>	<i>Corn (No. bushels)</i>	<i>Peanuts (No. bushels)</i>	<i>Tobacco (No. pounds)</i>
Southside counties (total)...	3,263,302	2,013,182	30,388,439
Amelia.....	204,934	100	2,703,531
Brunswick.....	345,353	60,506	3,018,946
Chesterfield.....	313,837	65,113	276,485
Dinwiddie.....	338,289	231,965	3,368,259
Greensville.....	114,135	175,518	6,200
Lunenburg.....	292,400	13	5,564,638
Mecklenburg.....	525,086	14,779	7,934,160
Nottoway.....	232,326	412	2,402,678
Prince Edward.....	218,660	5	5,107,637
Prince George.....	227,153	431,586	125
Surry.....	207,870	463,980	100
Sussex.....	243,259	569,205	5,680

\*Compiled from "Thirteenth Census of the United States, 1910," Vol. VII, pp. 810-820.

A study of map 16, which follows, reveals that the local peanut crop is grown in the counties east and south of Petersburg, while the tobacco crop is produced in the counties to the west. Cotton is grown principally in the counties along the Carolina border and in Sussex county.



MAP 16.—Local trade territory of Petersburg, showing tobacco, peanut and cotton production, by counties, according to the Thirteenth Census of the United States, 1909

## AGRICULTURAL RESOURCES 111

### *Agricultural Opportunities*

In the three counties immediately adjacent to Petersburg, between 60 and 80 per cent of the land area is in farms. The amount of farm land which is improved in these counties is between 35 and 50 per cent, although each county annually produces crops with a combined value of between \$1,000,000 and \$2,000,000. Approximately 75 per cent of the farms are operated by their owners.

The average value of farm land in these three counties, according to the Thirteenth Census of the United States, ranges from \$13.12 per acre in Prince George county to \$25.87 per acre in Chesterfield county. The unexcelled opportunities which these counties offer agricultural settlers desiring permanent homes have attracted people from all parts of the United States.

In recent years a large number of farmers from other less favored sections of the United States have made their homes in these counties, among whom are many Bohemian and Slovak farmers from the industrial and mining communities of western Pennsylvania, eastern Ohio and from Cleveland and Chicago.

### *Slavish Farmers*

The Slavs, of whom there are now about 3,000 on farms in the counties around Petersburg, are coming to this section of Virginia inspired with the desire to make homes for themselves on the fertile lands of the upper James. It is significant, as well as interesting, that in the Southside counties having the largest Slavish rural population is found the highest percentage of improved farm land. In Prince George county, for instance, which contains the largest number of Slavish farmers, the relative amount of improved farm land is 10 per cent greater than in any other Southside county, even in spite of the

fact that less than 70 per cent of the arable land in this county is in farms.<sup>83</sup>

*Summary of Local Agricultural Statistics*

In the following table a summary is presented of population, land area, farm property and crop statistics for each of the three counties adjacent to Petersburg, compared with the State of Virginia.

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<sup>83</sup>"Slavs on Southern Farms," by LeRoy Hodges, Senate document No. 595, 63d. Congress, 2d. Session, 1914, pp. 14-17.

TABLE 28.—*Farm area, value of farm property, and value of principal crops for the State of Virginia and each of the three counties adjacent to Petersburg in 1910\**

Item	State of Virginia	Chesterfield county	Dinwiddie county	Prince George county
Population, total.....	2,061,612	21,299	15,442	7,848
Population per square mile†.....	39.4	45.2	29.8	26.7
<i>Land and farm area</i>				
Approximate land area, acres.....	25,767,680	301,440	331,520	188,160
Per cent of land area in farms.....	75.7	61.3	79.8	68.7
Per cent of farm land improved.....	50.6	35.2	37.6	48.3
Average number of acres per farm.....	105.9	97.4	116.3	118.5
Per cent of all farms operated by owners.....	72.6	83.4	66.3	72.7
<i>Value of farm property</i>				
Value of all farm property.....	\$625,065,383	\$7,564,549	\$6,096,312	\$ 2,915,753
Average value of farm land per acre.....	20.24	25.87	14.21	13.12
<i>Value of farm products</i>				
Dairy products.....	\$ 7,704,326	\$ 132,111	\$ 77,025	\$ 31,933
Poultry and eggs.....	12,430,980	143,002	134,583	57,851
Combined value of all crops.....	100,531,157	899,161	1,584,119	922,548
Corn.....	28,885,944	245,363	282,593	175,786
Wheat.....	8,776,061	15,768	35,634	11,813
Oats.....	1,609,973	17,536	11,535	18,449
Hay and forage.....	10,256,998	126,337	76,916	72,208
Tobacco.....	12,169,086	24,041	277,147	26
Cotton.....	695,721	107	5,762	86
Vegetables.....	17,338,496	179,091	150,145	54,282
Fruits and nuts.....	4,442,334	39,902	48,202	20,387
All other crops†.....	16,356,544	251,016	696,185	569,511
Receipts from sale of animals.....	20,124,957	40,887	52,243	20,546
Value of animals slaughtered on farms.....	8,857,649	49,750	83,874	39,735

\*Compiled from "Thirteenth Census of the United States, 1910," Vol. III, table 1, p. 936; Vol. V, pp. 776-79; Vol. VII, table 1, p. 788, and table 2, p. 799.

†Rural.

‡Includes the value of peanuts which was not reported separately by counties.

## XIX. CLIMATE

The climate and natural health conditions in the Petersburg-Hopewell area are excellent. Serious storms rarely occur; while earthquakes are unknown. The annual spring freshets on the Appomattox never cause serious damage to property or loss of life as compared with the catastrophes along the Ohio and Mississippi and in other less favored sections of the country. The long, hard winters of the North do not occur; and while snow frequently falls in winter, it rarely remains on the ground more than 48 hours. In summer, the nights are comparatively cool and comfortable. The mean summer temperature is about 75 degrees Fahrenheit; while the annual temperature averages about 58 degrees. The average annual rainfall is approximately 46 inches, and there are but few days in the year when outdoor work cannot be carried on.

### *Summary of Climatological Data*

Table 29, which follows on page 115, presents a summary of climatological data for Petersburg compiled from the records of the United States Weather Bureau covering a period of from 16 to 21 years.

In table 30, on page 116, is shown the annual rainfall at Petersburg, by months, for a period of 21 years from 1888 to 1908, inclusive.

### *Relative Advantages*

The general climatic conditions at Petersburg are compared with those at Richmond, and the four South Atlantic ports of Baltimore, Norfolk, Wilmington and Charleston, and with those at seven leading industrial cities in the United States, including New York, Philadelphia, Pittsburgh, Cleveland, Chicago, St Louis and Birmingham, in table 31, on page 117.

## CLIMATE

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TABLE 29.—Summary of climatological data for Petersburg\*

Item	Length of record (Years)	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Mean temperature....	20	38.3	38.1	47.5	56.6	57.0	74.4	77.6	76.9	71.2	58.3	48.8	40.2	57.9
Highest temperature..	17	78	73	86	96	98	101	101	102	103	91	83	79	103
Lowest temperature..	17	-10	-3	10	21	29	36	52	50	35	42	9	3	-10
Average per cent. of re- lative humidity†.....		74	67	71	64	68	72	72	76	78	78	70	73	72
Average rainfall.....	21	2.72	3.80	4.57	3.51	4.76	4.42	4.89	4.59	3.72	3.20	2.51	3.10	45.85
Average number of rainy days.....	17	8	9	10	9	10	10	11	11	7	6	6	8	105
Average possible hours of sunshine per day.....		9.9	10.8	12.0	13.2	14.2	14.7	14.4	13.5	12.4	11.2	10.2	9.7	12.2
Possible hours of sun- shine.....														
Average snowfall.....		306.9	302.4	372.0	396.0	440.2	441.0	446.4	418.5	372.0	347.2	306.0	300.7	4,449.3
Average date of first killing frost.....	16	5.2	5.5	1.7	T†							0.4	2.8	15.6
Earliest date of killing frost.....	18										18th			
Average date of last killing frost.....	18				11th						1st			
Latest date of killing frost.....	18													
Prevailing wind direc- tion.....	17	S.W.	S.W.	S.W.	S.W.	S.W.	S.W.	S.W.	S.W.	N.E.	N.E.	S.W.	S.W.	S.W.

\*Compiled from the official records and from special reports of the United States Weather Bureau.

†For the Petersburg-Hopewell-Richmond district. Figures based on the Richmond records.

‡Trace.

TABLE 30.—Number of inches of rainfall at Petersburg, by months, during the years 1888-1908, inclusive\*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1888.....	2.45	2.94	8.58	0.96	8.30	3.12	7.00	5.45	9.84	3.10	3.51	2.73	57.98
1889.....	3.71	5.45	5.29	6.22	8.83	7.94	4.46	2.38	6.74	5.43	4.21	0.67	61.33
1890.....	1.07	2.70	3.57	2.94	5.31	1.95	3.81	3.85	4.29	8.10	0.06	3.70	41.35
1891.....	3.25	5.60	8.82	2.23	5.74	5.03	3.08	5.12	2.73	2.61	1.95	1.26	47.42
1892.....	3.17	3.28	3.17	5.51	3.30	5.01	5.02	3.97	3.46	0.43	3.55	1.68	43.55
1893.....	2.35	6.25	3.17	3.37	5.70	2.31	5.13	5.42	4.03	5.56	4.06	3.00	50.35
1894.....	3.06	3.80	2.02	3.47	5.68	1.96	4.58	3.56	8.15	3.70	1.78	2.66	44.42
1895.....	3.99	1.61	5.33	7.55	4.85	1.95	5.00	2.36	0.34	1.80	2.76	2.13	39.67
1896.....	2.58	4.64	3.33	1.91	7.25	5.90	8.33	0.70	3.05	0.63	2.53	1.93	42.78
1897.....	1.96	5.85	5.71	2.52	3.40	2.19	2.72	1.20	1.69	4.88	2.78	2.66	37.56
1898.....	1.21	0.78	3.95	4.90	5.35	2.57	4.74	2.83	2.31	3.33	2.43	2.04	36.44
1899.....	2.94	5.57	5.93	1.73	4.16	3.07	6.13	5.81	4.09	3.05	1.26	1.97	45.71
1900.....	2.95	4.54	2.74	2.50	1.69	6.49	4.14	2.42	3.67	2.82	4.87	2.88	41.71
1901.....	2.68	0.70	3.99	5.00	5.12	2.81	3.64	7.13	3.45	2.71	2.48	6.15	45.86
1902.....	2.95	5.67	2.60	3.53	3.86	3.47	3.87	4.42	4.43	2.53	2.50	3.32	43.15
1903.....	2.72	5.52	8.11	4.63	3.00	10.25	4.31	4.85	3.12	4.45	1.33	2.52	54.81
1904.....	2.07	2.69	3.33	1.61	1.24	5.17	5.85	3.20	2.41	2.12	3.56	5.24	38.49
1905.....	2.88	2.91	4.15	3.38	4.18	2.50	3.19	5.66	1.59	1.12	0.64	7.23	39.43
1906.....	1.78	1.60	5.44	3.29	3.43	8.72	7.50	8.98	0.14	3.68	0.72	3.19	48.47
1907.....	0.82	2.95	2.90	3.25	4.78†	6.08†	3.70†	5.30	5.80	2.52	4.24	4.24†	46.58
1908.....	4.40	4.83	3.94	3.27	4.80	4.29	6.59	11.68	2.79	2.58	1.49	3.85	54.49
Mean.....	2.72	3.80	4.57	3.51	4.76	4.42	4.89	4.59	3.72	3.20	2.51	3.10	45.85

\*Compiled from "Summary of the Climatological Data for the United States," United States Weather Bureau, Section 93, p. 5.

†Data for Dinwiddie county.

TABLE 31.—General climatic conditions at Petersburg, compared with Richmond and four specified South Atlantic ports, and seven designated leading industrial cities of the United States\*

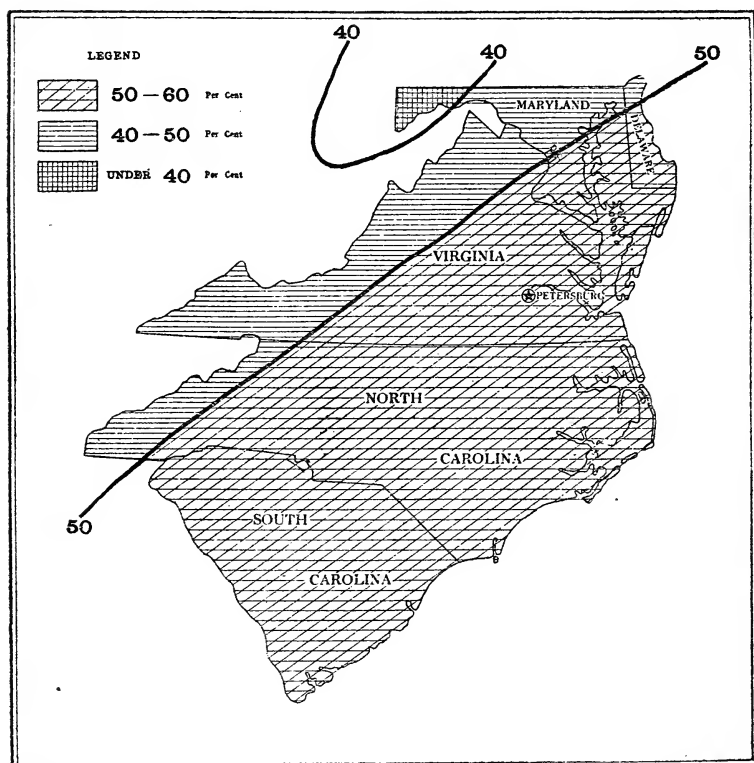
Name of city	Length of record (Years)	Average annual temperature (Degrees)			Average annual per cent of relative humidity	Average annual rainfall (Inches)	Average number of rainy days per annum	Average annual snowfall (Inches)	Possible hours of sunshine per annum	Prevailing annual wind direction
		Mean	Highest	Lowest						
PETERSBURG.....	20	57.9	103	-10	72†	45.85	105	15.6	4,449.3	S.W.
Richmond, Va.....	29	58.5	102	-3	72	42.99	122	16.8	4,452.4	N.
Baltimore, Md.....	33	55.1	104	-7	69	38.13	131	23.9	4,452.7	N.W.
Norfolk, Va.....	38	59.2	102	1	77	49.29	130	9.4	4,449.3	N.E.
Wilmington, N. C.....	38	63.2	103	5	79	50.88	128	1.3	4,445.9	S.W.
Charleston, S. C.....	38	65.6	104	7	78	48.59	118	T†	4,445.9	S.W.
New York, N. Y.....	82	51.8	100	-6	72	42.47	132	37.0	4,458.9	N.W.
Philadelphia, Pa.....	33	53.6	103	-6	70	40.88	129	24.0	4,455.6	N.W.
Pittsburgh, Pa.....	33	52.7	103	-20	71	36.17	152	32.4	4,458.9	N.W.
Cleveland, Ohio.....	38	49.0	99	-17	73	38.10	159	41.0	4,461.9	S.E.
Chicago, Ill.....	36	48.7	103	-23	75	33.54	126	36.3	4,461.9	S.W.
St. Louis, Mo.....	35	55.8	107	-22	70	40.10	114	21.1	4,452.7	S.
Birmingham, Ala.....	21	63.4	104	-10	72	51.70	116	0.6	4,445.9	S.W.

\*Compiled from the official records and from special reports of the United States Weather Bureau.

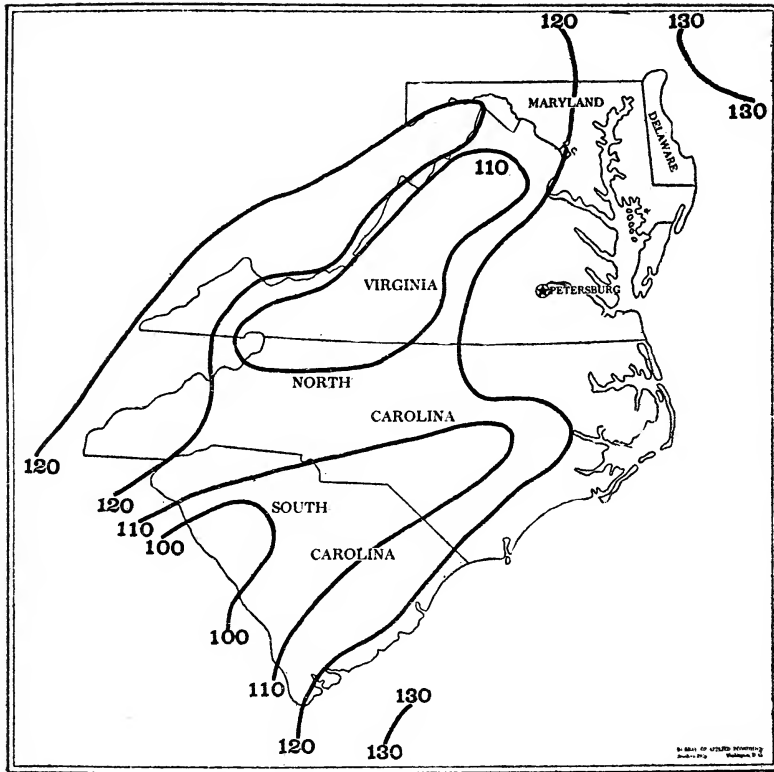
†For the Petersburg-Hopewell-Richmond district. Figures based on the Richmond records.

‡Trace.

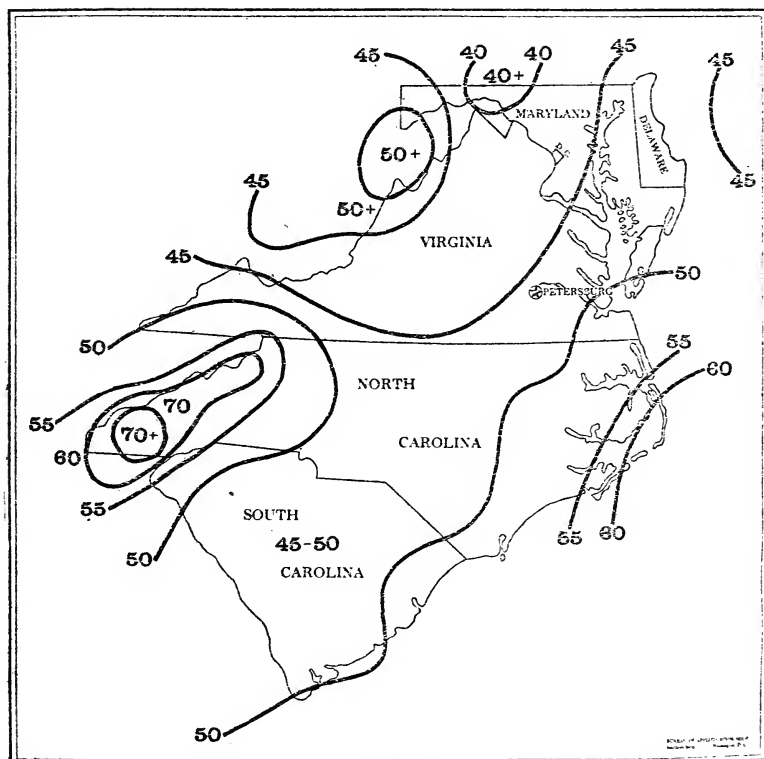
As these tables are easily understood, a discussion of them is not required to show the relative climatic advantages which the Petersburg-Hopewell area possesses. To supplement these tables, however, a series of climatological maps is presented below showing the annual percentage of sunshine, the average annual number of rainy days, the normal annual rainfall, the mean annual temperature, and the length of the crop-growing season in Virginia, with particular reference to Petersburg, and in the nearby States of Delaware, Maryland, North Carolina and South Carolina.



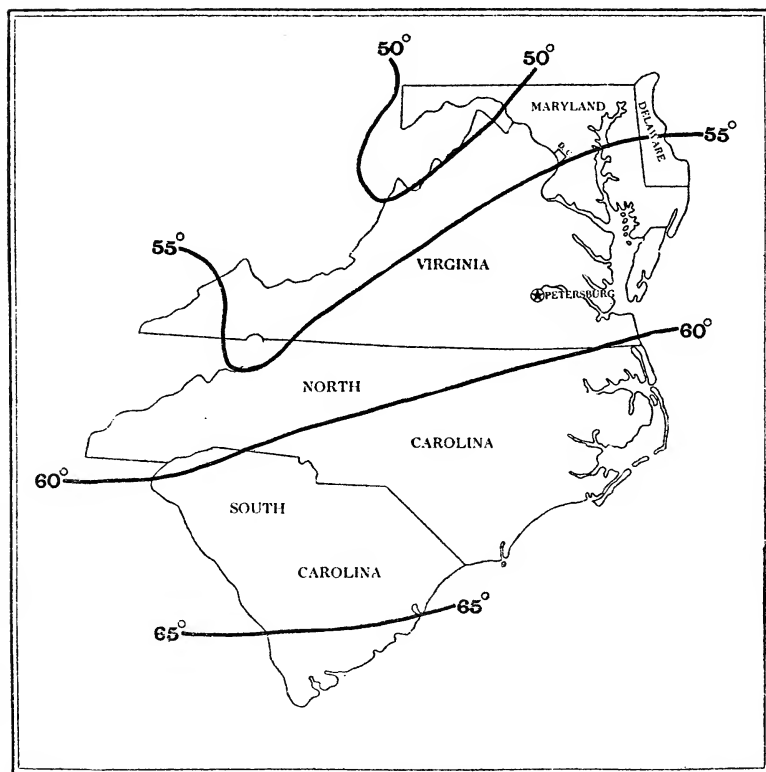
MAP 17.—Normal annual percentage of sunshine at Petersburg, according to the United States Weather Bureau, 1916



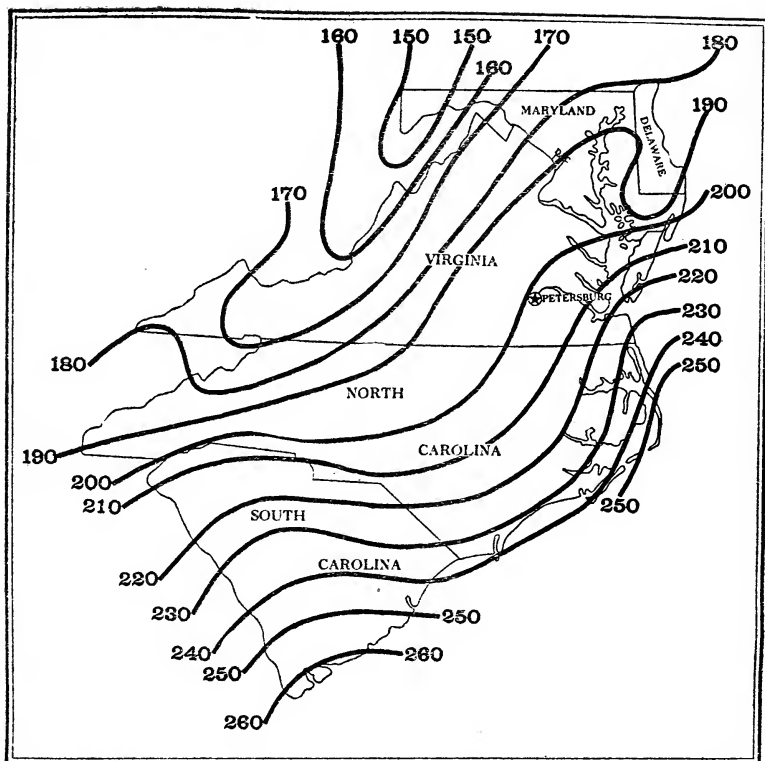
MAP 18.—Average annual number of days with precipitation of 0.01 inch or more at Petersburg, according to the United States Weather Bureau, 1916



MAP 19.—Normal annual number of inches of rainfall (precipitation) at Petersburg, according to the United States Weather Bureau, 1916



MAP 20.—Normal annual number degrees (Fahrenheit) of temperature at Petersburg, according to the United States Weather Bureau, 1916



MAP 21.—Average annual length of the crop-growing season (number of days) at Petersburg, according to the United States Weather Bureau, 1916

## XX. HOUSING FACILITIES AND COST OF LIVING

That Petersburg can house the operatives of new industrial enterprises has been very clearly demonstrated in connection with the establishment of the duPont works at Hopewell. During 1915 nearly 30,000 operatives were assembled here while the Hopewell works were under construction. In order to provide living accommodations for this new and unexpected population, which was about equal to the existing population, Petersburg undertook and successfully carried out a most remarkable building program. Residences of all sorts, kinds and descriptions were built literally by the thousands, while numerous hotels, rooming houses and business establishments were erected or enlarged.

For example, as is shown in the table following, the value of new buildings erected within the city limits during the year ending April 30, 1916, amounted to \$1,050,000, an increase over the value reported in the previous year of 425 per cent.

TABLE 32—Comparison of value of new buildings erected and additions and improvements to old buildings at Petersburg for the years 1915 and 1916\*

<i>Item</i>	<i>Year ending April 30, 1916</i>	<i>Year ending April 30, 1915</i>	<i>Per cent of increase, 1915-1916</i>
Value of new buildings erected....	\$1,050,000	\$200,000	425.0
Value of additions and improvements to old buildings.....	60,000	75,000	—20.0
Total.....	\$1,110,000	\$275,000	303.6

\*Compiled from the records of the Commissioner of the Revenue of the City of Petersburg.

The city now can provide sufficient housing facilities to care for all industrial demands.

*Rents*

In May, 1914, before the extensive enlargement of the Hopewell works was contemplated, the average monthly rent for two-room cottages at Petersburg, occupied by white tenants, was between \$4 and \$4.50, while the average rent for six-room dwellings occupied by white wage-earners was about \$20 per month. An investigation of the rents of 717 houses in Petersburg, occupied by white tenants, made by the Bureau of Applied Economics in May, 1916, revealed, in spite of the fact that in some instances there had been increases as high as 150 per cent during the two years between May 1, 1914, and May 1, 1916, that the average monthly rent per room for 2, 3, 4, 5 and 6 room dwellings was between \$2.25 and \$5.50—an average monthly rent of not more than \$3.52 per room. A study of the rents of 759 dwellings occupied by negro tenants at this time showed that the average monthly rent per room for 2, 3, 4 and 5 room dwellings was approximately \$2.74, ranging between \$2 and \$3.25.

Comparing these average monthly room rents with those paid by native and foreign-born white industrial wage earners in Boston, Buffalo, Chicago, Cleveland, Milwaukee, New York and Philadelphia, as reported by the United States Immigration Commission in 1910, it is found that the 1916 Petersburg rents are comparatively low. Statistics showing the increase in rents at these larger industrial cities since 1910 are not available, but as the increased 1916 rents at Petersburg compare very favorably with the rents of six years ago in these cities, it is safe to assume that the present rents among the wage earners at Petersburg are in reality relatively low, rather than abnormally high.

The following table shows the average rent per room among white industrial wage earners at Petersburg in

1916, compared with the average rent per room among native and foreign-born wage earners at the leading northern and western industrial cities in 1910.

TABLE 33—Average rent per room per month among white industrial wage earners at Petersburg in 1916, compared with the average rent among white native and foreign-born wage earners in specified cities in 1910

<i>City</i>	<i>Average rent per room per month</i>
PETERSBURG*	\$3.52
Boston†	3.13
Buffalo†	2.18
Chicago†	2.31
Cleveland†	2.03
Milwaukee†	2.12
New York†	3.89
Philadelphia†	2.71

\*Compiled from the records of the leading Petersburg rental agencies (1916).

†Compiled from "Reports of the Immigration Commission" (Senate Document No. 338, 61st Congress, 2d Session), Vol. 27 (1910).

### *Price of Food*

Between July 15, 1914, and July 15, 1916, the price of food at Petersburg increased, on the whole, comparatively little. On a few articles, such as Irish potatoes, flour and butter, there was an increase of from 15 to about 35 per cent, while the price of sugar increased from four and one-half to eight and one-half cents a pound. The price of meats, on the other hand, showed very little change.

Comparing the average retail prices of the fifteen principal articles of food at Petersburg on July 15, 1915, with the average prices reported by the United States Bureau of Labor Statistics for Baltimore, Birmingham, Buffalo, Detroit, Philadelphia and Pittsburgh, on the same date, it is found that the Petersburg prices are relatively low. As these cities were selected for comparison simply because of their industrial importance, the fact that the cost of foodstuffs is comparatively lower at Petersburg is significant in that it indicates a relative economic advantage possessed by the Petersburg-Hopewell industrial area. The following table shows the comparative prices at these cities on July 15, 1915, in detail.

## PETERSBURG, VIRGINIA

TABLE 34.—Average retail prices of the fifteen principal articles of food at Petersburg on July 15, 1915, compared with specified cities

Commodity	Petersburg*	Baltimore†	Birmingham†	Buffalo†	Detroit	Philadelphia†	Pittsburgh†
Sirloin steak, per lb. ....	\$ .22	.26	.30	.24	.24	.32	.30
Round steak, per lb. ....	.20½	.24	.22½	.21	.21	.28	.25
Rib roast, bone in, per lb. ....	.20	.20	.22½	.17	.19	.23	.22
Pork chops, loin, per lb. ....	.20	.19	.22½	.22	.20	.22	.22
Bacon, smoked, per lb. ....	.20	.22½	.35	.22	.24	.28	.30
Ham, smoked, sliced, per lb. ....	.26	.30	.30	.26	.27	.30	.30
Ham, smoked, whole, per lb. ....	.20½	.19	....	.16	.18	.20	.18
Lard, pure tub, per lb. ....	.14	.14	.14	.13	.16	.14	.14
Hens, dressed, not drawn, per lb. ....	.25	.21	....	.20½	.21	.23	.25
Hens, live, per lb. ....	.18	....	.15	....	....	....	....
Flour, ½ barrel bag. ....	1.05	1.05	1.00	.98	.95	1.00	1.00
Corn meal, per lb. ....	.02½	.02½	.02½	.03	.03½	.02½	.03
Eggs, fresh, per doz. ....	.25	.23½	.25	.28	.25	.28	.25
Butter, creamery, print, per lb. ....	.40	.38	.40	.31	.32	.40	.35
Potatoes, Irish, per peck. ....	.26	.16	.25	.19	.18	.22	.20
Sugar, granulated, per lb. ....	.06½	.06½	.07½	.06½	.07	.06½	.07
Milk, fresh, pasteurized, delivered, bottled, per quart. ....	.10	.09	....	.08	.08	.08	.10

\*Prices furnished by six representative retail merchants.

†Prices compiled from "Retail Prices" (Bulletin No. 197, United States Bureau of Labor Statistics), June, 1916.

*Industrial Fire Insurance Rates*

Petersburg is rated as a first-class city by the Southeastern Underwriters' Association (Virginia Inspection and Rating Bureau), and the fire insurance rates on industrial buildings are on a relatively low basis. The following table shows the rates on certain classes of buildings used for industrial purposes.

TABLE 35.—*Fire insurance rates at Petersburg, as of May 1, 1916, on industrial brick and frame buildings, by specified industries\**

Industry	Basis rate†	
	Brick building‡ (Class B)	Frame building‡ (Class C-D)
Agricultural implement works.....	\$1.50	\$2.50
Barrel and stave mills.....	2.50	3.75
Brick works.....	1.50	2.00
Canning and preserving factories.....	1.50	2.50
Carriage and wagon works.....	2.00	2.75
Cotton bag factories.....	1.25	2.00
Cotton mills.....	.75	1.10
Fertilizer plants.....	1.00	1.25
Furniture factories.....	3.00	4.00
Iron and steel works and rolling mills.....	1.25	1.75
Knitting mills.....	.50	.85
Leather goods manufactories.....	1.00	1.25
Mattress factories.....	3.00	3.50
Peanut factories.....	1.50	2.00
Planing mills.....	2.75	3.25
Pottery and tile works.....	2.00	2.50
Shoe factories.....	1.00	1.25
Silk mills.....	.50	1.10
Soap factories.....	1.75	2.75
Spoke and handle factories.....	2.50	3.50
Spool factories.....	1.75	2.50
Stove works.....	1.00	1.75
Tobacco factories.....	1.25	2.25
Trunk factories.....	1.75	2.60
Wooden box factories.....	2.00	2.85

\*Petersburg is rated a first-class city by the Southeastern Underwriters Association (Virginia Inspection and Rating Bureau), and the rates shown are for buildings of standard construction according to the specifications of the Association.

†Rate is for each \$100 of insured value.

‡Establishments with sprinkler systems receive rates ranging from 40 per cent to 70 per cent less than the basis rates for standard buildings.

*Petersburg Building Code*

The Petersburg building regulations have been very thoroughly revised recently, and a full-time city building inspector appointed to see that the provisions of the new code are properly observed. The principal provisions of the code,<sup>84</sup> which relate directly to and govern the construction and maintenance of buildings in the city for manufacturing purposes, follow.

*Approval of Specifications.*—Before erection, construction or alteration of any building can be undertaken, specifications must be approved by the city building inspector.

*Building Defined.*—“Any structure having a roof, whether with or without one or more enclosing walls,” is considered a building and is subject to the provisions of the city building code.

*Building Material Tests.*—Tests of structural material of whatever nature must be made under the supervision of the city building inspector.

*Lime Mortar.*—Slaked lime mortar must be composed of one part of lime paste and not more than three parts of sand. The lime is to be thoroughly burnt, of good quality, and properly slaked before being mixed with the sand.

*Cement Mortar.*—Cement mortar must be one part cement, and not more than three parts of sand. The mixture must be used immediately after being made.

*Cement and Lime Mortar.*—Cement and lime mortar must be made of one part slaked lime paste, one part cement, with not more than three parts of sand to each.

*Cement.*—Cements must meet the following specifications:

1. Portland cement must possess a tensile strength of not less than 200 pounds per square inch after stand-

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<sup>84</sup>“Building Code of the City of Petersburg, Virginia,” 1916.

ing 24 hours in moist air; and not less than 500 pounds per square inch after one day in air, and six days in water.

2. Cements other than Portland shall stand a test of 60 pounds to the square inch after standing two days in air; and after one day in air and six days in water, must sustain a tensile strain of at least 120 pounds per square inch.

*Concrete.*—Concrete for foundations must consist of at least one part Portland cement, two and a half parts sand, and five parts clean broken stone of two and a half-inch ring size; or one part Portland cement and five parts of sand gravel of three-inch ring size.

*Iron.*—Wrought iron must possess an ultimate tensile resistance of not less than 48,000 pounds per square inch, an elastic limit of not less than 24,000 pounds per square inch, and an elongation of 20 per cent in eight inches.

Cast iron must be clean and gray. Sand-mold bars five feet long and one inch square must be able to sustain a central load of 450 pounds on supports four feet six inches apart.

*Steel.*—All structural steel must have an ultimate tensile strength of from 54,000 to 64,000 pounds per square inch, an elastic limit of not less than 32,000 pounds per square inch, and an elongation of not less than 20 per cent in eight inches.

Rivet steel must have an ultimate strength of from 50,000 to 58,000 pounds per square inch.

Cast steel from an open hearth must contain from one-fourth to one-half per cent carbon, not over eight one-hundredths of one per cent of phosphorus, and must be free more or less from blow holes.

*Bearing Capacity of Soil.*—Where no tests have been

made, the different soils are assumed to sustain the following loads to the superficial foot:

1. Soft clay, one ton per square foot.
2. Ordinary clay and sand together, in layers, wet and springy, two tons per square foot.
3. Clay or fine sand, firm and dry, three tons per square foot.
4. Very firm, coarse sand, stiff gravel, or hard clay, four tons per square foot.

**Foundations.**—“Every building, except buildings erected upon solid rock, or buildings erected upon wharves and piers on the water front, must have foundations of brick, stone, iron, steel or concrete laid not less than 18 inches below the surface of the earth, on the solid ground or level surface or rock, or upon piles or ranging timbers when solid earth or rock is not found.”

For factories and warehouses more than three stories in height, the pressure under foundation footings must be computed at both full “dead” and “live” load.

**Height of Buildings.**—The height of non-fireproof buildings is limited to 65 feet.

**Thickness of Walls.**—The thickness of factory and warehouse walls, 25 feet or less apart, carrying floor and roof loads, must be constructed as follows:

Height of building	Thickness of walls (in inches)											
	Basement		Story									
	Stone	Brick	1	2	3	4	5	6	7	8	9	10
1 story . . .	20	16	13									
2 stories . . .	20	16	13	13								
3 stories . . .	20	16	13	13	13							
4 stories . . .	24	20	16	16	16	13						
5 stories . . .	28	24	20	16	16	16	13					
6 stories . . .	32	28	24	20	20	20	16	16				
7 stories . . .	32	28	24	24	20	20	20	16	16			
8 stories . . .	36	32	24	24	24	20	20	20	16	16		
9 stories . . .	36	32	28	24	24	24	20	20	20	16	16	
10 stories . . .	36	32	28	28	24	24	24	20	20	20	16	16

Walls separated by a clear span distance of over 25 feet, must be made 4 inches thicker than is required above, for each 12½ feet of such extra span distance. Piers or buttresses can be used, however, when it is desired to avoid increasing the thickness of the walls.

The height of stories for all given thicknesses of walls shall not exceed:

1. First story..... 16 feet in the clear.
2. Second story ..... 14 feet in the clear.
3. Third story ..... 12 feet in the clear.
4. Fourth and upper stories..... 11 feet in the clear.

If any story exceeds these heights, its walls and all walls below it will have to be increased four inches in thickness.

*Floor Areas.*—The floor area in factories between brick fire walls of a thickness corresponding to the main bearing walls is limited as follows:

<i>Location of building</i>	<i>Limit of floor area<sup>85</sup> (in square feet)</i>		
	<i>Non-fireproof construction</i>	<i>Fireproof construction not exceeding 55 ft. in height</i>	<i>Fireproof construction exceeding 55 ft. in height</i>
Fronting on one street only	5,000	10,000	5,000
Extending from street to street.....	6,000	12,000	6,000
On corner fronting on two streets.....	6,000	12,000	6,000
Fronting on three streets..	7,500	15,000	7,500

*Electrical Installation.*—Electric wiring or any other installation for furnishing light, heat or power must be installed according to the rules and regulations of the

<sup>85</sup>Floor area in buildings equipped with approved automatic sprinklers can be increased as follows: (a) Non-fireproof construction, 50 per cent greater; (b) both classes of fireproof construction, 33 1-3 per cent greater.

National Electrical Code of the National Board of Fire Underwriters, subject to the approval of the city building inspector.

*Fire Escapes.*—"Every factory, mill, manufactory or workshop \* \* \* over two stories in height \* \* \* shall be provided with such good and sufficient fire escapes, stairways, or other means of egress in case of fire as shall be directed by the city building inspector."

*Floor Loads.*—The "dead" loads in all buildings shall consist of the actual weight of walls, floors, roofs, partitions and all permanent construction.

The "live" or variable loads shall consist of all loads other than dead loads.

Every floor must be of sufficient strength safely to bear the weight to be imposed thereon in addition to the weight of the materials of which the floor is composed. Factory floors must be of sufficient strength safely to bear upon every superficial foot of surface not less than 150 pounds. Where running machinery is used, floors must be additionally strengthened as may be required by the city building inspector.

*Enforcement of Building Regulations.*—The city building inspector and his assistants are vested with police power in the discharge of their official duties; while the chief of the city fire department and his assistants have the right to enter all buildings to investigate or prevent violations of the city building ordinances.

## XXI. PUBLIC HEALTH

Considered as a whole, general public health conditions at Petersburg are above the average. Rapid progress is being made along sanitary lines in all parts of the city. The city public health department now has the full support of the council and executive officers in its work, and within a few years it is planned to make Petersburg a model health community.

The work of the local authorities in preventing the spread of disease at Petersburg during the past two years deserves the highest praise, for during the most of this period, while the Hopewell works were under construction, the city has sheltered an increased incoming and outgoing population as large as the existing permanent population prior to the outbreak of the European war. This new population has been assembled from all parts of the country, and includes a large number of negroes who have congregated in greatly overcrowded living quarters. In spite of these abnormal conditions, there has been no serious outbreak of any disease; while the annual death rate from disease has been unusually low.

### *Typhoid Fever*

This is best illustrated in the decrease in the number of cases of typhoid fever reported. For instance, the number of cases of typhoid reported in 1915 was nearly 78 per cent lower than the number of cases reported in 1910. Nine of the 24 cases of typhoid reported in the city in 1915 were contracted elsewhere and brought to Petersburg for treatment.

Three negroes and two white persons died of typhoid in 1915. Three of these five persons who died of the disease in this year—two of them white and one negro—

were non-residents of the city. Assuming that the average number of people in Petersburg during 1915 was 35,000, which is a very conservative estimate, the death rate per 1,000 population from typhoid for the year was only .14 as compared with a rate of .40 in 1913. Considering the terribly overcrowded living conditions in the city during this year, this is a very creditable record.

The decrease in the number of cases of typhoid reported in Petersburg during the past six years is shown by the following figures:<sup>86</sup>

<i>Year</i>	<i>Number cases typhoid reported</i>
1910.....	107
1911.....	82
1912.....	59
1913.....	37
1914.....	30
1915.....	24

### *Mortality Rate*

The mortality rate at Petersburg<sup>87</sup> in 1913, by specified age groups, compared with Richmond, Baltimore, Norfolk, Wilmington, North Carolina, Charleston, South Carolina, and Savannah, Georgia, is shown in table 36, on the next page. Figures for 1913 are used in order to show the relative conditions at Petersburg as compared with these other representative Atlantic seaboard cities during a normal period.

Table 37, on page 136, shows the death rate per 1,000 population at Petersburg in 1913, compared with these same cities, by specified diseases.

<sup>86</sup>Compiled from "Annual Report, Department of Public Health, City of Petersburg, Virginia, 1915," p. 6.

<sup>87</sup>In drawing conclusions from tables 36 and 37 it should be kept in mind that the figures for Petersburg include deaths at the city almshouse. The Central State Hospital for the insane, exclusively for negro patients, also is located at Petersburg.

TABLE 36.—Deaths in specified age groups at Petersburg, compared with Richmond and the five principal South Atlantic ports in 1913\*

Name of city	Estimated population July 1, 1913		Total deaths all ages†		Per cent of total number deaths at age of—			
	Number	Per cent of total	Number	Rate per 1,000 population	Under 1 year	Under 5 years	Under 20 years	20 years and over
PETERSBURG (total).....	24,878	...	596	24.0	21.5	28.7	35.1	64.9
White.....	13,520	54.4	228	16.9	18.9	24.6	29.0	71.1
Colored.....	11,358	45.6	368	32.4	23.1	31.3	38.9	61.1
Richmond, Va. (total).....	133,185	...	2,718	20.4	18.7	24.5	30.4	69.6
White.....	84,401	63.4	1,412	16.7	16.5	21.9	27.3	72.7
Colored.....	48,784	36.6	1,306	26.8	21.0	27.4	33.8	66.2
Baltimore, Md. (total).....	574,575	...	10,624	18.5	18.9	26.0	31.2	68.8
White.....	487,025	84.8	7,912	16.2	18.8	25.6	30.2	69.8
Colored.....	87,550	15.2	2,712	31.0	19.3	27.1	34.1	65.9
Norfolk, Va. (total).....	85,005	...	1,662	19.6	17.5	23.3	30.0	70.0
White.....	53,374	62.8	716	13.4	15.5	20.4	26.0	74.0
Colored.....	31,631	37.2	946	29.9	19.0	25.6	33.1	66.9
Wilmington, N. C. (total).....	27,298	...	615	22.5	24.6	32.8	37.9	62.1
White.....	14,447	52.9	241	16.7	21.2	29.5	32.8	67.2
Colored.....	12,851	47.1	374	29.1	26.7	35.0	41.2	58.8
Charleston, S. C. (total).....	59,815	...	1,616	27.0	20.0	29.3	36.2	63.8
White.....	28,227	47.2	442	15.7	15.4	21.7	27.8	72.2
Colored.....	31,588	52.8	1,174	37.2	21.7	32.1	39.4	60.6
Savannah, Ga. (total).....	67,473	...	1,684	25.0	18.1	24.4	30.9	69.1
White.....	32,961	48.8	571	17.3	15.4	22.6	27.0	73.0
Colored.....	34,512	51.2	1,113	32.2	19.4	25.3	33.0	67.0

\*Compiled from "Mortality Statistics, 1913," United States Bureau of the Census.

†Exclusive of stillbirths.

TABLE 37.—Death rate per 1,000 population at Petersburg from specified causes, compared with Richmond and the five principal South Atlantic ports in 1913\*

Name of city	Estimated population July 1, 1913		Death rate per 1,000 population from—									
	Number	Per cent of total	All causes†	Typhoid fever	Malaria	Measles	Scarlet fever	Diphtheria	Tuberculosis of lungs	Pneumonia	Diarrhea and enteritis (under 2 years)	Violent deaths‡
PETERSBURG (total)-----	24,378	-----	24.0	.40	.16	.04	-----	.04	2.01	1.77	2.13	1.09
White-----	13,320	54.4	16.9	.37	.07	-----	-----	.07	1.26	.67	1.55	.89
Colored-----	11,358	45.6	32.4	.44	.26	.09	-----	-----	2.91	3.08	2.52	1.32
Richmond, Va. (total)-----	133,185	-----	20.4	.20	-----	.20	.04	.06	1.70	1.02	.86	1.19
White-----	84,401	63.4	16.7	.21	-----	.19	.05	.10	.92	.91	.72	.87
Colored-----	48,784	36.6	26.8	.18	-----	.21	.02	-----	3.03	2.85	1.11	1.76
Baltimore, Md. (total)-----	574,575	-----	18.5	.24	.02	.20	.08	.15	2.08	2.04	1.02	.84
White-----	487,025	84.8	16.2	.19	.01	.19	.09	.17	1.52	1.60	.96	.78
Colored-----	87,550	15.2	31.0	.50	.05	.29	.02	.06	5.16	4.49	1.30	1.20
Norfolk, Va. (total)-----	85,005	-----	19.6	.30	.24	.13	-----	.05	2.05	1.67	.98	1.35
White-----	53,374	62.8	13.4	.26	.19	.01	.19	.09	1.11	.71	.64	.78
Colored-----	31,631	37.2	29.9	.38	.32	.03	-----	.03	3.64	3.29	1.55	1.99
Wilmington, N. C. (total)-----	27,298	-----	22.5	.81	.11	.04	-----	.07	1.98	1.83	2.02	.77
White-----	14,447	52.9	16.7	.76	-----	.07	-----	.14	1.38	.62	1.38	.42
Colored-----	12,851	47.1	29.1	.86	.23	-----	-----	-----	2.05	3.19	2.72	1.17
Charleston, S. C. (total)-----	59,815	-----	27.0	.52	.22	.13	.05	.05	2.19	2.47	1.66	1.10
White-----	28,227	47.2	15.7	.35	.11	.04	.04	.04	.85	1.17	.57	.57
Colored-----	31,588	52.8	37.2	.67	.32	.10	.06	.06	3.39	3.64	2.53	1.58
Savannah, Ga. (total)-----	67,473	-----	25.0	.43	.77	.04	.02	.30	2.49	2.00	1.33	1.68
White-----	32,961	48.8	17.3	.49	.12	.06	.03	.09	1.40	1.12	1.34	.88
Colored-----	34,512	51.2	32.2	.38	1.39	.03	-----	.49	3.54	2.84	1.77	2.00

\*Compiled from "Mortality Statistics, 1913," United States Bureau of the Census.

†Exclusive of stillbirths.

‡Exclusive of suicide.

The rather high annual infant mortality rate in 1913 shown for Petersburg in the two preceding tables is being materially lowered by the more extended educational work now being done by the city public health department among the negroes and poorer whites in the congested factory districts. While it is readily admitted that much remains to be done along this line, the significant point is that the condition is fully recognized and every effort is now being made to correct it.

With more funds at its disposal, and with a more widespread cooperation on the part of the general public, the city health authorities will be able in the course of the next year or two materially to lower the present death rate. While the present rate at Petersburg is not as high as in some of the other principal cities on the Atlantic seaboard, it is nevertheless the determination of the local authorities to cut it in two at least.

## XXII. EDUCATIONAL FACILITIES

With eight public school buildings in use, and an authorized building program for the next two years which will about double the efficiency of the present plant, Petersburg is making every effort fully to meet the educational demands of the city's rapidly growing population. The assessed value of the public school plant in December, 1916, was \$320,000, while the available authorized appropriations for new buildings amounted to \$310,000. Included among the new buildings is a high school, two white grammar schools and three schools for negroes.

When this authorized building program is completed, the oldest public school building in use in the city will be only nine years old, and each building will conform to the most exacting requirements of architectural design, sanitation and service. Petersburg then will have one of the best housed public school systems in Virginia.

In addition to the public schools, the Southern College, an institution chartered by the Confederate legislature for the training of young women; the St. Joseph's Catholic School for Girls; and the Virginia Normal and Industrial Institute, a State school exclusively for the colored race, are located at Petersburg.

### *Public School Population and Enrollment*

In 1910 there were 2,860 white and 2,848 colored children in Petersburg between the ages of seven and twenty. According to the school census of 1915, there were 3,355 white and 2,853 colored children of school age in the city—an increase of over 17 per cent in the white school population between 1910 and 1915. The white enrollment in the public schools in September, 1916, also exceeded that of 1915 by more than 300.

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The total estimated enrollment in the public schools of Petersburg for the session 1916-1917 is about 5,200. The white enrollment increased during the five years, 1911-1916, more than 53 per cent, and the colored more than 15 per cent.

### *School Expenditures*

The annual expenditures for school purposes, exclusive of buildings, is approximately \$85,000, or about \$16.30 per capita of enrollment.

In December, 1916, the number of teachers employed was 107, who received salaries ranging from \$55 to \$70 per month in the white elementary grades, and from \$35 to \$45 per month in the colored schools. Teachers in the high schools were paid from \$675 to \$1,300 per annum. Under a new policy of the city school board, the salaries of all teachers gradually will be raised in accordance with a graduated scale.

### *Public School Curriculum*

Courses offered in the Petersburg public schools conform to the Virginia State requirements. Seven years are required in the elementary grades; and four years in the high schools, where from 17 to 19 Carnegie units are required for graduation. The school year is divided into two sections, so that promotions are made in February and in June.

The curriculum includes all standard public school courses, and in addition, courses are offered in music, drawing, domestic science, manual training and commercial work.

Medical inspection of all pupils is provided, while in all the schools careful attention is paid to matters of health and sanitation. Two full-time school nurses also are employed; one for the white and one for the colored schools.

### XXIII. CITY AND COUNTY GOVERNMENT

The present charter of the City of Petersburg (December, 1916) was granted by the General Assembly of Virginia in 1875, and vests the city government in a mayor and a bicameral council. Under authority of this act, the city is divided into six equal population wards, each of which constitutes a separate election district. There is a growing public demand in Petersburg, however, for the adoption of a more efficient and less cumbersome form of government than is possible under the present charter.

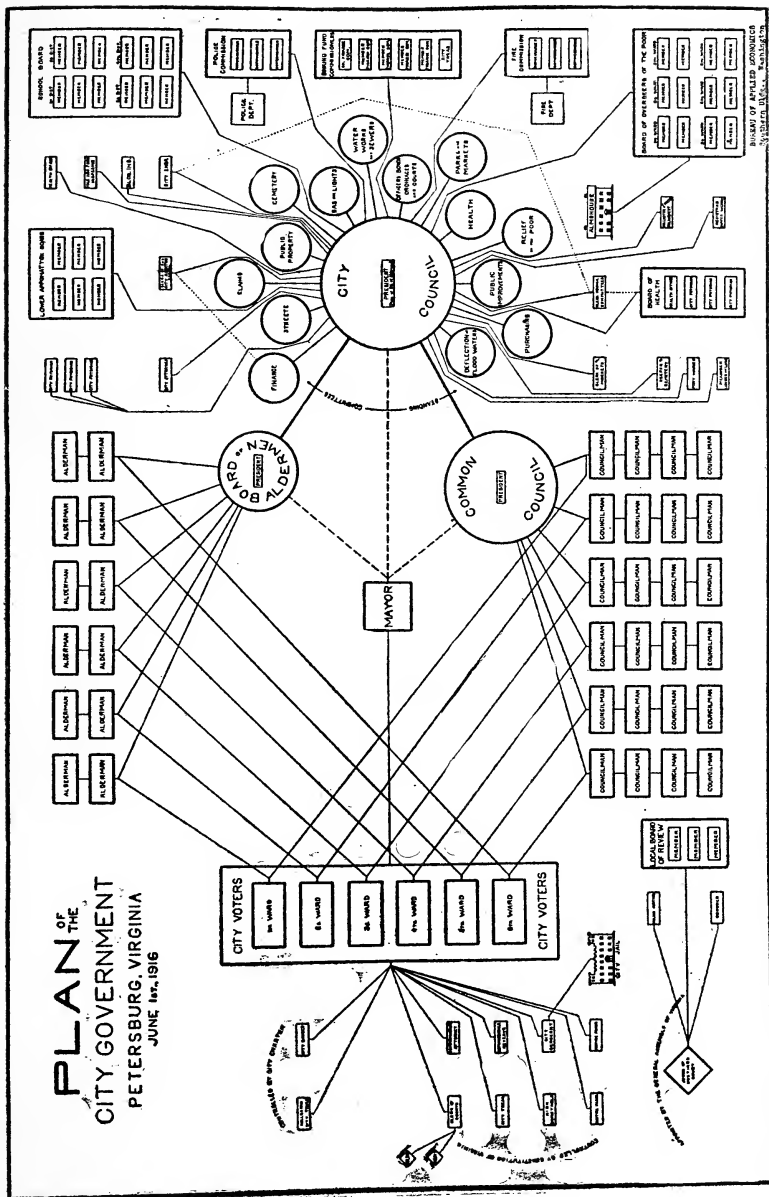
Diagram 2, on the next page, shows the organization of the city government of Petersburg on June 1, 1916.

#### *Commission-Manager Government Recommended for Petersburg*

In 1914, a special committee of the Chamber of Commerce of Petersburg,<sup>88</sup> appointed to study the city government, recommended that Petersburg take advantage of the Virginia optional charter act of March 13, 1913, and adopt a commission-manager form of government with "a legislative and supervisory commission, or 'council' as it is designated in the Virginia law, of five members who shall be elected from the city at large for terms of four years each, who shall receive nominal salaries to be fixed as provided by the statute, and, with the exception of those city officials whose election by popular vote is expressly required by the Constitution of Virginia, that the members of this council be the only elective officers of the city; and that the executive and

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<sup>88</sup>Committee on Simplified Form of City Government (1914): R. B. Willcox, chairman; Bernard C. Syme, secretary; O. W. Mattox; Carl H. Davis; Robert Gilliam, Jr.; and LeRoy Hodges. Report submitted to the Chamber of Commerce in July, 1914.



administrative powers of the city, including the appointment of officials and employes subject to an effective and impartial civil service, be vested in a single official to be known as the 'city manager,' who shall be employed either from the city, if a suitable man can be found, or from the country at large, by the council, which shall fix his salary and exercise supervisory control over his work, and which shall have the power to remove him at pleasure."

*Present Organization Petersburg City Government*<sup>89</sup>

Under the existing charter the present city government of Petersburg (as shown in diagram 2, on page 141), is organized with a bicameral council of thirty-six members, composed of a board of aldermen, or upper chamber, with twelve members, two being elected from each ward for four years; and a common council, with twenty-four members, four of whom are elected in each ward to serve for four years each.

*Council*

Every two years—in even years—the two branches of the council meet on the first week day in September and each elects a president and a vice-president to serve for the next two years. Members of committees and committee chairmen are appointed at these meetings.

In the absence of both the president and the vice-president, each branch of the council elects its own presiding officer, called the president pro tempore. Either of these officers, of each branch of the council, when presiding, signs the proceedings of the previous meeting of the respective chamber, after they are read and approved; has authority to call any member to the chair to preside while he participates in debates, can vote, and in

<sup>89</sup>The government of Hopewell is discussed on pp. 30-32.

the event of a tie, can vote a second time to break the tie. A majority of the members of each branch of the council constitute a quorum for the transaction of business.

When the two chambers of the council meet in joint session, the president of the board of aldermen presides. In joint votes, he can break a tie.

The rules of the council provide that if a member of either chamber fails to attend three successive regular monthly meetings, unless sick or out of the city, he forfeits his seat.

Standing committees of the council are joint committees composed usually of two aldermen and three councilmen. The finance committee is the only exception to this general rule. This committee, while always composed of five members representing the two chambers of the council, is made up without regard to any fixed number of members who shall represent either the board of aldermen or the common council. The city treasurer acts as secretary to the finance committee, while the city auditor serves as clerk. The fourteen joint standing committees are as follows:

1. Finance
2. Claims
3. Streets
4. Public property
5. Cemetery
6. Gas and lights
7. Water works and sewers
8. Officers' bonds, ordinances, and courts of justice
9. Public parks and markets
10. Health
11. Relief of the poor
12. Public improvements
13. Deflection of flood waters Appomattox river from harbor
14. Purchasing.

### *Mayor and Other Elective Officers*

The chief executive officer of the city, under the present charter, is the mayor, who is elected every four years by the qualified voters from the city at large. In case of

a vacancy in the office of mayor, the council, in joint session, elects a qualified person to act as mayor for the unexpired term, or until the next election of members of the council, if such an election should be held first. In the absence of the mayor, the president of the board of aldermen, or, if he also is absent, the president of the common council discharges the duties of the office.

The mayor has the power to veto ordinances passed by the council, which require a two-thirds vote of each branch to reenact them. He has the powers of a justice of the peace, but cannot accept fees as such, and is the custodian of the city seal. The council fixes the mayor's salary, which is at present \$1,200 per annum.

Other city officers elected by the qualified voters of Petersburg are as follows:

1. Officers whose election by the people is prescribed by the Constitution of Virginia—

City treasurer.....	4 years
Commissioner of the revenue.....	4 "
Commonwealth attorney.....	4 "
City sergeant.....	4 "
Clerk of the Hustings Court <sup>90</sup> .....	8 "
High constable .....	4 "
Justices of the peace (2).....	4 "

2. Officers whose election by the people is required by the city charter—

Collector of city taxes.....	4 years
City gauger.....	4 "

### *Officials Appointed by the Council*

Among the other principal city officials, who are appointed by the council, each for a term of four years, are the following:

City attorney  
City auditor<sup>91</sup>  
City engineer

<sup>90</sup>Also clerk of Fourth Virginia Circuit Court at Petersburg.

<sup>91</sup>Serves as clerk to the city council, and to the finance committee of the council.

Clerk to council committees<sup>92</sup>  
Health officer  
Building inspector  
Milk and food inspector  
Clerk of the markets  
Keeper of Blandford Cemetery  
Collector of delinquent taxes  
Register of the water works  
Port warden  
Measurer of lumber and logs  
City physicians (3)

### *Boards and Commissions*

The present city government of Petersburg also includes a number of special boards and commissions, each possessing certain delegated powers and authority in the management of the city's affairs.

*School Board.*—The city is divided into four special school districts, from each of which the council appoints three persons, who serve for a term of three years, as members of the school board. This board, consisting of twelve members, has direct control of the public schools of the city.

*Board of Health.*—The board of health consists of the health officer and the three city physicians, who are appointed by the council. The inspector of milk and food supplies, appointed by the council, is under the supervision of this board, as are the sanitary inspectors who are appointed by the health committee of the council.

*Police Commission.*—The police commission consists of three members, who are appointed by the council for a term of three years. This commission appoints the chief of police, officers and men, and has complete control of the police department of the city.

*Fire Commission.*—Like the police commission, the fire commission is appointed by the council, consists of

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<sup>92</sup>Serves also as clerk to the city engineer, and to the board of health.

three members, who serve for a term of three years, and has complete control of the city fire department, including the appointment of the chief, officers and men.

*Board of Overseers of the Poor.*—The board of overseers of the poor has charge of the city almshouse. It consists of twelve members, two appointed by the council from each of the six wards of the city for a term of four years.

*Lower Appomattox Board.*—The lower Appomattox board has charge of the harbor development and maintenance, and consists of six members who are appointed by the council from the city at large.

*Sinking Fund Commissioners.*—The city charter provides that a body known as the "sinking fund commissioners" must be appointed by the council to manage the sinking fund required to secure the retirement of the city's fiscal obligations. This body, as appointed by the council, now consists of the members of the joint committee on finance of the council and the city treasurer, who acts as secretary.

### *Municipal Courts*

The Petersburg city courts include the hustings or corporation court, the judge of which is appointed by the General Assembly of Virginia for a term of eight years; and the police court, which is presided over by a justice who is named for a term of four years by the judge of the hustings court.

The judge of the hustings court also appoints the city coroner, who serves for a term of four years; and who, to be eligible for appointment, must be a licensed physician.

*Organization of Prince George County Government*

In view of the large territory within the Petersburg-Hopewell area that lies in Prince George county, the organization of the county government also is of importance.

In Virginia, counties have no jurisdiction over the cities, and a duplication of city and county government thus is avoided. The government of Petersburg, for instance, is entirely independent of the counties of Chesterfield, Dinwiddie and Prince George, in which the city is located; while the government of the incorporated area of the city of Hopewell is independent of the county of Prince George. The State constitution prescribes the form of county government, which is practically the same in all Virginia counties. Local legislative powers are vested in a board of supervisors, which is composed of one supervisor elected from each magisterial district of the respective counties. The principal administrative officers are elected by the people from the county at large, while limited executive powers are vested in the judges of the circuit courts.

The organization of the county government of Prince George county on July 1, 1916, is shown in the following diagram:



## XXIV. PUBLIC FINANCE AND TAXATION

On July 1, 1916, the total authorized and outstanding bonded debt of the City of Petersburg amounted to \$1,930,000—a net indebtedness of \$1,356,936. The charter limits the ratio of bonded indebtedness to the assessed valuation of real property at 22 per cent. On this date the gross indebtedness amounted to only 16.5 per cent, while the net indebtedness was less than 11.7 per cent.

The total amount of the sinking fund on July 1, 1916, was \$573,064, invested principally in local City of Petersburg, City of Portsmouth, Virginia, and City of Bristol, Tennessee, securities, and in bank certificates of deposit. The city's annual appropriation to the sinking fund now amounts to \$23,109.<sup>93</sup>

The assessed valuation of real property in Petersburg on July 1, 1916, was \$11,694,873; and that of personal property, \$11,244,991—a total assessed valuation of taxable property of \$22,939,864. The legal basis on which the valuation of property is made under the new Virginia tax laws is the "fair market value." The basis on which the assessment is made at Petersburg is about 75 per cent of the true valuation of the property. The levies of real property taxes in the city for 1915 amounted to \$192,987, and the personal property levies to \$89,945—the total amount of levies of property taxes for this year being \$282,932.<sup>94</sup>

### *Relative Financial Condition of the City of Petersburg*

The general financial condition of the City of Petersburg in 1913, according to the reports of the United

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<sup>93</sup>Figures furnished by the City Auditor of Petersburg.

<sup>94</sup>Figures furnished by the Commissioner of the Revenue of the City of Petersburg.

States Bureau of the Census, is shown in the following table:

TABLE 38.—*General financial condition of the City of Petersburg, 1913\**

<i>Population</i>	
Estimated as of July 1, 1913.....	24,878
<i>Valuation and taxation</i>	
Total assessed valuation of property.....	\$20,359,335
Real property.....	11,141,060
Personal property.....	9,218,275
Per capita assessed valuation of property.....	818.37
Basis of assessment (per cent of true valuation):	
Real property.....	75
Personal property.....	75
Average rate for city purposes:	
Per \$1,000 of assessed valuation.....	14.00
Per \$1,000 of estimated true valuation.....	10.50
Total levies of property taxes.....	285,131
Per capita levy of property taxes.....	11.46
<i>Income</i>	
Total receipts during the year.....	\$451,679
Revenue receipts.....	404,403
Non-revenue receipts.....	47,276
Per capita income from revenue receipts.....	16.26
<i>Expenditures</i>	
Total payments during the year.....	\$426,761
Governmental cost payments.....	393,859
Non-governmental cost payments.....	32,902
Per capita governmental cost payments.....	15.83
<i>Indebtedness</i>	
Total indebtedness.....	\$1,415,000
Funded debt outstanding.....	1,415,000
Net indebtedness.....	776,358
Per capita net indebtedness.....	31.21
<i>Assets</i>	
Total city assets and properties.....	\$1,718,884
Sinking fund assets.....	638,642
Value of city properties.....	975,000

\*Compiled from "Wealth, Debt and Taxation, 1913," United States Bureau of the Census.

Comparing Petersburg's general financial condition in this year with the general financial condition of the cities of Lynchburg, Virginia; Charlotte, North Carolina; Columbia, South Carolina; Lexington, Kentucky;

and Knoxville, Tennessee—five representative southern cities of about the size of Petersburg—it is found that the average city tax rate per \$1,000 of assessed valuation is lower than in any of these cities with the exception of Charlotte; while the per capita net indebtedness is lower with the exception of Lexington. A closer study of the Charlotte figures, however, reveals that its income in 1913 was less than its expenditures, and that its per capital governmental cost payments in this year were more than twice as high as those in Petersburg; while it also is noticed that the per capita governmental cost payments were less in Petersburg than in Lexington in this year. From this comparison, it is easily seen that the relative financial condition of the City of Petersburg is excellent.

The following table shows in detail the general financial condition of Petersburg in 1913, compared with these five representative southern cities.

TABLE 1. FINANCIAL CONDITION OF PETERSBURG, 1913, COMPARED WITH FIVE REPRESENTATIVE SOUTHERN CITIES.

TABLE 30.—General financial condition of the City of Petersburg, compared with five specified representative southern cities having a population of less than 50,000, 1913\*

	PETERS- BURG	Lynchburg, Va.	Charlotte, N. C.	Columbia, S. C.	Lexington, Ky.	Knoxville, Tenn.
<i>Population</i>						
Estimated as of July 1, 1913.....	24, 878	31, 275	37, 015	32, 954	37, 935	37, 549
<i>Valuation and taxation</i>						
Total assessed valuation of property.....	\$20, 359, 335	\$34, 530, 899	\$18, 900, 395	\$11, 838, 659	\$23, 901, 824	\$ 22, 782, 239
Real property.....	11, 141, 060	18, 521, 796	10, 722, 747	7, 044, 098	17, 536, 625	18, 713, 375
Personal property.....	9, 218, 275	16, 009, 103	8, 177, 648	4, 794, 651	5, 827, 515	2, 683, 332
Other property.....					537, 684	1, 385, 532
Per capita assessed valuation of property.....	818.37	1, 104.11	510.61	359.25	630.07	606.73
Basis of assessment (per cent of true valuation):						
Real property.....	75	72	30	25	80	80
Personal property.....	75	75	30	25	50	80
Average rate for city purposes:						
Per \$1,000 of assessed valuation.....	14.00	15.00	12.00	20.00	16.20	16.00
Per \$1,000 of estimated true valuation.....	10.50	10.80	3.60	5.00	12.96	12.80
Total levies of property taxes.....	285, 131	517, 963	226, 773	236, 773	387, 210	304, 516
Per capita levy of property taxes.....	11.46	16.56	6.13	7.18	10.21	9.71
<i>Income</i>						
Total receipts during the year.....	\$ 451, 679	\$ 1, 616, 965	\$ 1, 397, 944	\$ 775, 806	\$ 1, 164, 537	\$ 1, 365, 983
Revenue receipts.....	404, 403	747, 238	502, 356	572, 825	651, 390	834, 937
Non-revenue receipts.....	47, 276	869, 727	895, 588	202, 981	513, 147	531, 046
Per capita income from revenue receipts.....	16.26	23.89	13.57	17.38	17.17	22.24
<i>Expenditures</i>						
Total payments during the year.....	\$ 426, 761	\$ 1, 233, 631	\$ 1, 406, 308	\$ 818, 790	\$ 1, 138, 365	\$ 1, 261, 599
Governmental cost payments.....	383, 859	806, 134	1, 174, 137	656, 712	711, 242	762, 743
Non-governmental cost payments.....	32, 902	427, 447	232, 171	162, 078	427, 123	498, 856
Per capita governmental cost payments.....	15.83	25.78	31.72	19.93	18.75	20.31
<i>Indebtedness</i>						
Total indebtedness.....	\$ 1, 415, 000	\$ 2, 994, 300	\$ 2, 498, 827	\$ 1, 366, 048	\$ 1, 318, 237	\$ 3, 580, 543
Funded debt outstanding.....	1, 415, 000	2, 994, 300	2, 155, 000	1, 315, 000	1, 315, 000	3, 279, 000
Net indebtedness.....	778, 358	2, 715, 651	283, 827	1, 299, 363	1, 017, 336	3, 104, 527
Per capita net indebtedness.....	31.21	86.83	58.22	39.43	24.20	82.68
<i>Assets</i>						
Total city assets and properties.....	\$ 1, 718, 884	\$ 3, 105, 301	\$ 1, 939, 414	\$ 1, 057, 416	\$ 934, 073	\$ 2, 684, 504
Sinking fund assets.....	638, 642	278, 649	16, 331	16, 331	99, 352	170, 947
Value of city properties.....	975, 000	2, 408, 117	1, 661, 765	1, 881, 500	721, 646	2, 370, 247

\*Compiled from "Wealth, Debt and Taxation, 1913," and "Financial Statistics of Cities, 1913" (United States Bureau of the Census).

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## *General Financial Condition of the State of Virginia*

The following table shows the general financial condition of the State of Virginia in 1915, according to the reports of the United States Bureau of the Census.

TABLE 40.—*General financial condition of the State of Virginia, 1915\**

<i>Population</i>	
Estimated as of March 31, 1914.....	2,144,757
<i>Valuation and taxation</i>	
Total assessed valuation of property.....	\$934,767,438
Real property.....	547,483,624
Personal property.....	247,882,889
Other property.....	139,400,925
Per capita assessed valuation of property.....	435.84
Rate of levy for general property tax per \$1,000 assessed valuation.....	3.50
Rate of levy for poll tax.....	1.00
Total tax levy.....	4,380,170
Of the general property tax.....	3,271,686
Of special property and other special taxes.....	654,671
Of the poll tax.....	453,813
Per capita levy of property and other special taxes.....	1.83
<i>Income</i>	
Total receipts during the year.....	\$ 12,781,053
Revenue receipts.....	9,357,923
Non-revenue receipts.....	3,423,130
Per capita income from revenue receipts.....	4.36
<i>Expenditures</i>	
Total payments during the year.....	\$ 12,561,054
Governmental cost payments.....	8,835,293
Non-governmental cost payments.....	3,725,761
Per capita governmental cost payments.....	4.12
<i>Indebtedness</i>	
Total State indebtedness at close of year.....	\$ 24,929,471
Funded or fixed debt outstanding.....	24,780,486
Current indebtedness.....	148,985
Net indebtedness at close of year.....	24,142,898
Per capita net indebtedness.....	11.26
<i>Assets</i>	
Total State assets and value of public properties at close of year	\$20,779,432
Sinking fund assets.....	637,588
General State cash on hand at close of year.....	1,009,600
Value of State public properties.....	12,855,938

\*Compiled from "Financial Statistics of States, 1915," United States Bureau of the Census.

*City and State Tax Rates*

The present 1916 city tax rate on real property and tangible personal property at Petersburg is \$1.65 per \$100 of assessed valuation. The State tax on these classes of property is 10 cents per \$100 of assessed valuation. The local rate on capital is 30 cents and the State rate 70 cents—a total tax of \$1 per \$100 of assessed valuation.

A digest of the local and State tax rates at Petersburg is contained in the following table:

# FINANCE AND TAXATION 155

TABLE 41.—*State and city tax rates (exclusive of license taxes) per \$100 of assessed valuation, on specified classes of property at Petersburg, 1916\**

Class of property	Virginia State rate	City of Petersburg	
		City rate	Combined city and State rate
Capitation (poll).....	\$1.50†	\$1.00	\$2.50†
Income.....	1%‡	.....	1%‡
Inheritances.....	1%§	.....	1%§
Real property.....	\$ .10	1.65	\$1.75
Tangible personal property.....	.10	1.65	1.75
Intangible personal property:			
Bonds, notes, etc.....	.65	.30	.95
Bonds of political sub-divisions**.....	.35	.....	.35
Capital.....	.70	.30	1.00
Net capital of merchants in excess of \$1,000.....	††	1.40††	1.40
Funds, etc., under control of courts, etc.....	.65	.30	.95
Money.....	.20	.....	.20
Shares of stock (except banks)§§.....	.65	.30	.95
Bank stock¶.....	.35	1.15	1.50

\*This table was prepared with the assistance of the Commissioner of the Revenue of the City of Petersburg, and is based on "Virginia: Tax Laws, 1916," issued by the Auditor of Public Accounts of Virginia. The rates are based on a unit of \$100 of assessed valuation, if not otherwise specified.

Local taxes are levied by the city or county in addition to the State taxes, but the city properties are not subject to county taxation.

†This tax is levied on every male, 21 years of age or over, except those pensioned by the State for military service. Fifty cents is returned and paid into the local treasury.

‡Certain deductions are permitted under the law; while the following exemptions are authorized: individual income of \$1,200; combined income of husband and wife of \$1,800, and \$200 additional for each child under 21 years of age; guardians, for each ward, \$1,200.

§The law specifies a tax of 1 per cent. per \$100 on direct inheritances in excess of \$15,000, and 5 per cent on collateral inheritances, termed the "primary rates." Inheritances exceeding \$15,000, up to \$50,000, at primary rates; \$50,000 to \$250,000 at two times primary rates; \$250,000 to \$1,000,000, at three times primary rates; and in excess of \$1,000,000, at four times the primary rates.

\*\*Legality of local assessments in doubt.

††The State imposes a license tax of \$10 on "purchases" of merchants in excess of \$1,000, but not more than \$2,000; and on purchases over \$2,000 and up to \$100,000, \$10 on first \$2,000 and 20 cents per \$100 in excess thereof up to \$100,000; and on purchases over \$100,000, \$10 on first \$2,000, and 20 cents per \$100 in excess thereof up to \$100,000, and 10 cents on each \$100 over \$100,000.

‡‡In addition to this tax the city requires a local license tax of \$20 per annum.

§§Shares of stock of Virginia corporations are exempt.

¶Paid by banks for individual stockholders.

In addition to the property taxes, the City of Petersburg and the State of Virginia also levy special license taxes on certain businesses. The State and local license tax on a few selected businesses at Petersburg in 1916 are shown in the following table:

TABLE 42.—*Rates of special city and State license taxes for selected businesses at Petersburg, 1916<sup>a</sup>*

<i>Business</i>	<i>City of Petersburg rate <sup>b</sup> (Per annum)</i>	<i>State of Virginia rate <sup>c</sup> (Per annum)</i>
Attorney at law.....	\$25.00 <sup>d</sup>	\$25.00 <sup>e</sup>
Architect.....	25.00 <sup>d</sup>	25.00 <sup>f</sup>
Civil engineer and surveyor.....	25.00 <sup>d</sup>	15.00 <sup>g</sup>
Electric wiring contractor.....	50.00	5.00 <sup>h</sup>
Labor agent.....	200.00	25.00 <sup>i</sup>
Laundry, steam.....	25.00	25.00
Merchant (capital over \$1,000).....	20.00 <sup>j</sup>	10.00 <sup>k</sup>
Merchant, commission.....	50.00 <sup>l</sup>	50.00 <sup>m</sup>

<sup>a</sup>A license tax does not exempt the licensed business from taxation on its tangible property used, nor from the tax on its profits or income.

<sup>b</sup>Compiled from "City Ordinances, Licenses and Taxes, City of Petersburg, 1916-1917."

<sup>c</sup>Compiled from "Virginia Tax Laws: 1916," issued by Auditor of Public Accounts of Virginia.

<sup>d</sup>On receipts above \$2,000 per annum, an additional tax of \$1.40 per \$100.

<sup>e</sup>When income is less than \$500 per annum, or has practiced less than 5 years, \$15.

<sup>f</sup>When income is less than \$500 per annum, \$10.

<sup>g</sup>When income is less than \$500 per annum, or has practiced less than 5 years, \$5.

<sup>h</sup>On amount of orders in excess of \$5,000, the tax ranges from \$10 to \$150, when in excess of \$150,000. This State license includes all classes of "contractors."

<sup>i</sup>State license in Petersburg can be issued only on certificate of the hustings' court.

<sup>j</sup>On capital in excess of \$1,000, an additional tax of \$1.40 per \$100.

<sup>k</sup>The State tax is levied on the amount of annual "purchases." When purchases exceed \$2,000 and are less than \$100,000, an additional tax of 20 cents per \$100, and on the amount over \$100,000, 10 cents on the \$100.

<sup>l</sup>And an additional tax of 4 per cent on commissions and profits.

<sup>m</sup>If commissions exceed \$1,000, an additional tax of \$1 per \$100.

*County Tax Rates*

As a number of the principal industrial establishments in the Petersburg-Hopewell area are located outside of the corporation limits, and as some of the most desirable unoccupied factory sites in the area are outside of the cities, the favorable tax rates in the counties should not be overlooked. A comparison of the local rates, for instance, shows that the tax on real and tangible personal property is from 25 to 55 cents lower per \$100 in the counties than in the city.

The local rates and the combined local and State tax rates in the magisterial districts of Chesterfield, Dinwiddie and Prince George counties which lie adjacent to Petersburg and Hopewell are shown, for the several classes of property, in the following table:

TABLE 43.—County and local tax rates (exclusive of license taxes) per \$100 of assessed valuation on specified classes of property in designated magisterial districts of the three counties adjacent to Petersburg, 1916\*.

Class of property	Prince George county				Dinwiddie county		Chesterfield county	
	Rives district		Bland district		Namozine district		Matoaca district	
	Combined local rate	Combined local and State rate	Combined local rate	Combined local and State rate	Combined local rate	Combined local and State rate	Combined local rate	Combined local and State rate
Capitation (poll).....	.....	\$1.50†	.....	\$1.50†	.....	\$1.50†	.....	\$1.50†
Income.....	.....	1%†	.....	1%†	.....	1%†	.....	1%†
Inheritances.....	.....	1%\$	.....	1%\$	.....	1%\$	.....	1%\$
Real property.....	\$1.20	\$1.30	\$1.40	\$1.50	\$1.10	\$1.20	\$1.20	\$1.30
Tangible personal property.....	1.20	1.30	1.40	1.50	1.10	1.20	1.20	1.30
Intangible personal property:								
Bonds, notes, etc.....	.....	.65	.....	.65	.....	.65	.....	.65
Bonds of political sub-divisions**.....	.....	.35	.....	.35	.....	.35	.....	.35
Capital.....	.....	.70	.....	.70	.....	.70	.....	.70
Net capital of merchants in excess of \$1,000.....	.....	††	.....	††	1.10	1.10††	.....	††
Funds, etc., under control of courts, etc.....	.....	.65	.....	.65	.....	.65	.....	.65
Money.....	.....	.20	.....	.20	.....	.20	.....	.20
Shares of stock (except banks)\$§.....	.....	.65	.....	.65	.....	.65	.....	.65
Bank stock¶.....	.....	.35	.....	.35	.....	.35	.....	.35

\*This table was prepared with the assistance of the commissioners of the revenue of Prince George county; of Dinwiddie county, second district; and of Chesterfield county, second district, and is based on "Virginia: Tax Laws, 1916," issued by the Auditor of Public Accounts of Virginia. The rates are based on a unit of \$100 of assessed valuation, if not otherwise specified.

At the time this table was prepared, the local tax rates in the City of Hopewell had not been fixed. Rates in Bland magisterial district, Prince George county, which lies adjacent to the Hopewell incorporated territory, are shown.

†, ‡, \$, \*\*, ††, §§, ¶—See notes to table 41, p. 155.

## XXV. METHOD AND COST OF OBTAINING ORDINARY BUSINESS CHARTERS IN VIRGINIA

By constitutional provision, the State Corporation Commission is the official agency in Virginia through which charters for domestic corporations are secured and licenses are issued to foreign corporations to do business in the State. The organization of corporations is governed by an act of the General Assembly of Virginia, in force as of May 21, 1903, which prescribes, in five chapters, the method by which charters can be obtained.

The first chapters of this act provides for the creation of all corporations intended to transact any ordinary business. The second chapter provides for the creation of railroad corporations; the third for the creation of telephone and telegraph companies, and public service companies, other than railroads; the fourth for the creation of all corporations in which no capital stock is required or is to be issued; while the fifth chapter contains general provisions applicable to corporations.

Domestic corporations to transact ordinary business can be organized under the provisions of the first chapter of this act by any number of persons, not less than three, by executing, filing and recording the proper certificate.

### *What Certificate Must Set Forth*

Section 2, Chapter 1, of the act provides that this certificate of incorporation for an ordinary business corporation must contain:

“(a) The name of the corporation, which name shall contain the word ‘corporation,’ or the word ‘incorpo-

rated,' and shall be such as to distinguish it from any other corporation engaged in a similar business, or promoting or carrying on similar objects or purposes in this State.<sup>95</sup>

(b) The name of the county, (and the postoffice address therein), city or town wherein its principal office in this State is to be located.

(c) The purposes for which it is formed.

(d) The maximum and minimum amount of the capital stock of the corporation, and its division into shares; and, if there be more than one class of stock created by the certificate of incorporation, a description of the different classes thereof, with the terms on which such different classes are created.<sup>96</sup>

(e) The period, if any, limited for the duration of the corporation.

(f) The names and residences of the officers and directors who, unless sooner changed by the stockholders, are for the first year to manage the affairs of the corporation.

(g) The amount of real estate to which its holdings at any time are to be limited."

The certificate also may contain any provisions which the incorporations may choose to insert for the regulation of the business, and for the conduct of the affairs of the corporation; and any provisions creating, defining, limiting, or regulating the powers of the corporation, of the directors, or of the stockholders, or of any

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<sup>95</sup>The names of banks and trust companies need not contain the word 'corporation' or 'incorporated,' but the name of a trust company must contain the word 'trust' or 'trusts.'

<sup>96</sup>Banks must have a minimum capital of \$10,000. Trust companies must have a minimum capital of \$100,000. Insurance companies must have a minimum capital of not less than \$25,000 and the minimum shall not be less than one-tenth of the maximum authorized capital, and at least \$10,000 in bonds must be deposited before the charter can be issued. Guaranty, indemnity, fidelity and security companies must have a minimum capital of \$50,000.

class or classes of stockholders; provided, of course, that such provisions are not inconsistent with the act.

*Execution and Acknowledgment of Certificate*

This certificate must "be signed by at least three persons; shall be acknowledged by them before an officer authorized by the laws of this State to take acknowledgments of deeds, and shall be presented in term time, or in vacation, to the judge of the circuit court of the county, or of the circuit, corporation, or chancery court of the city wherein the principal office of the corporation is to be located. Such judge shall thereupon certify thereon whether in his opinion such certificate is signed and acknowledged in accordance with the requirements of this act, and if not, in what respects it is faulty. As soon as the certificate is so endorsed by the judge, and the fee and tax, if any, required by law to be paid to the State upon the charter shall have been duly paid, it, together with the receipt for such payment, and separate certified checks or bank drafts, postal note or money order, one payable to the secretary of the Commonwealth and one payable to the clerk of the proper court for the amounts of the proper fees for recording such charter, may be presented to the State Corporation Commission, which shall ascertain and declare whether the applicants have, by complying with the requirements of the law, entitled themselves to the charter, and shall issue or refuse the same accordingly. When so issued, the certificate, with all endorsements, together with the order thereon of the State Corporation Commission, shall be certified by the said commission, as required by law, to the secretary of the Commonwealth, and by the last named officer recorded in the charter records of his office, who shall thereupon certify the same to the clerk of the circuit court of the county, or to the corporation court

of the city wherein the principal office of such corporation is to be located, or to the clerk of the chancery court of the city of Richmond, when such principal office is to be located in said city, who shall likewise record the same in a book to be provided and kept for the purpose in his office, and when so recorded the fact of such recordation shall be endorsed upon the said certificate, and the said certificate, with all endorsements thereon, shall be returned by the said clerk to the State Corporation Commission and lodged and preserved in the office of its clerk. As soon as the charter shall have been lodged for recordation in the office of the secretary of the Commonwealth, the persons who signed and acknowledged said certificate, and their successors, and such other persons as may be associated with them according to the provisions of law, or of their charter, shall be a body, politic and corporate, by the name set forth in the said certificate, with the powers and upon the terms set forth therein, so far as not in conflict with this act; and in addition shall have all the general powers and be subject to all general restrictions and liabilities conferred and imposed by this act and by the general laws of this State applicable thereto, not in conflict with this act, or with said charter, as hereinbefore provided. Any failure on the part of such clerk to comply with the provisions of this section shall subject him to a fine of not less than ten dollars nor more than one hundred dollars, to be imposed by the State Corporation Commission. '197

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<sup>97</sup>"An Act Concerning Corporations," May 21, 1903. Chapter 1, Section 3—"Virginia Corporation Law," (State Corporation Commission) June 17, 1916, pp. 8 and 9.

*Summary of Steps Required to Obtain Charter*

The several steps required to obtain a charter under this chapter of the Virginia corporation laws may be briefly enumerated as follows:<sup>98</sup>

1. The execution, by signing and acknowledging, of the proper certificate.

2. The certification, by the judge of the proper court.

3. The payment into the treasury of the charter fee.

4. The presentation to the commission of the certificate and the receipt of the Auditor of Public Accounts, for the proper charter fee; certified check for \$5, payable to State Corporation Commission, for seal tax and costs in this office; another, payable to Secretary of the Commonwealth, and still another, payable to the proper court clerk, for recordation fees. The commission then issues an order, attached to the certificate, constituting, with the certificate, the charter proper.

5. The charter is then transmitted to the Secretary of the Commonwealth and recorded in his office.

6. It is then transmitted by the Secretary of the Commonwealth to the clerk of the proper court and recorded in that office.

7. The clerk of the court then returns the original papers to the office of the State Corporation Commission, in which they are lodged and preserved.

*Caption Prescribed for Certificate*

In order that a certain degree of uniformity may be obtained, the State Corporation Commission desires that certificates of incorporation be prepared under the following caption:

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<sup>98</sup>Compiled from "Methods and Costs of Obtaining Charters in Virginia," (Circular No. 8, State Corporation Commission), 1911, p. 6.

## "CERTIFICATE OF INCORPORATION

OF

.....

This is to certify that we do hereby associate ourselves to establish a corporation under and by virtue of the provisions of an act of the General Assembly of the State of Virginia, entitled 'An act concerning corporations,' which became a law on the 21st day of May, 1903, and acts amendatory thereof, for the purposes, and under the corporate name, hereinafter mentioned, and to that end we do, by this our certificate, set forth as follows:"<sup>99</sup>

*Form for Endorsement by Judge*

The following form is prescribed by the commission for the endorsement on the certificate to be made by the judge:

"VIRGINIA:

In the Circuit Court of.....county:

In the foregoing certificate for incorporation of the.....  
.....was presented to  
me....., Judge of the.....  
Court of....., in term time (or  
vacation), and having been examined by me, I now certify that  
the said certificate for incorporation is, in my opinion, signed  
and acknowledged in accordance with an act of the General  
Assembly of Virginia, entitled 'An act concerning corporations,'  
which became a law on the 21st day of May, 1903, and acts  
amendatory thereof.

Given under my hand this.....day of....., 19...."

*Cost of Securing Charters*

Domestic corporations, other than those authorized to exercise the powers of a transportation or transmission company, or to own, lease, construct, maintain and operate a public service line or road of any kind, upon

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<sup>99</sup>The law requires that corporate name shall contain the word "corporation," or the word, "incorporated."

the granting or extension of their charters, are required to pay a fee into the treasury of the State of Virginia as follows:

“For a company whose maximum authorized capital stock is

\$50,000 or less.....	\$10.00
over \$50,000 and less than \$3,000,000,	
20 cents for each \$1,000 or fraction	
thereof;	
\$3,000,000 or more.....	\$600.00

provided, however, that building fund associations, mutual insurance companies without capital stock, and other mutual companies not organized for strictly benevolent or charitable purposes, shall pay \$25 only for each certificate of incorporation or charter granted; and provided, further, that no fee shall be imposed on corporations organized for religious, benevolent, or literary puprposes, or to conduct a purely charitable institution or institutions.”<sup>100</sup>

Application for charters must be accompanied by separate certified checks, bank drafts, postal notes or money orders drawn to the order of the respective departments as follows:<sup>101</sup>

1. To the *Treasurer of Virginia*, an amount sufficient to pay the charter fee provided for in section 38 of the tax law, quoted above.

2. To the *State Corporation Commission*, for tax on its seal and cost of entering, issuing and certifying the charter .....\$5.00.

<sup>100</sup>Compiled from “Virginia Corporation Law,” (State Corporation Commission) June 17, 1916, (Section 38 of the tax law), p. 85.

<sup>101</sup>Compiled from “Methods and Costs of Obtaining Charters in Virginia” (Circular No. 8, State Corporation Commission), 1911, pp. 16 and 17.

3. To the *Secretary of the Commonwealth*, for amount of his recording fee, in accordance with the following specifications:

For recording charter, including order of the State Corporation Commission, and certifying same, 2 pages or less (for each additional page, 50 cents must be added).....\$3.00.

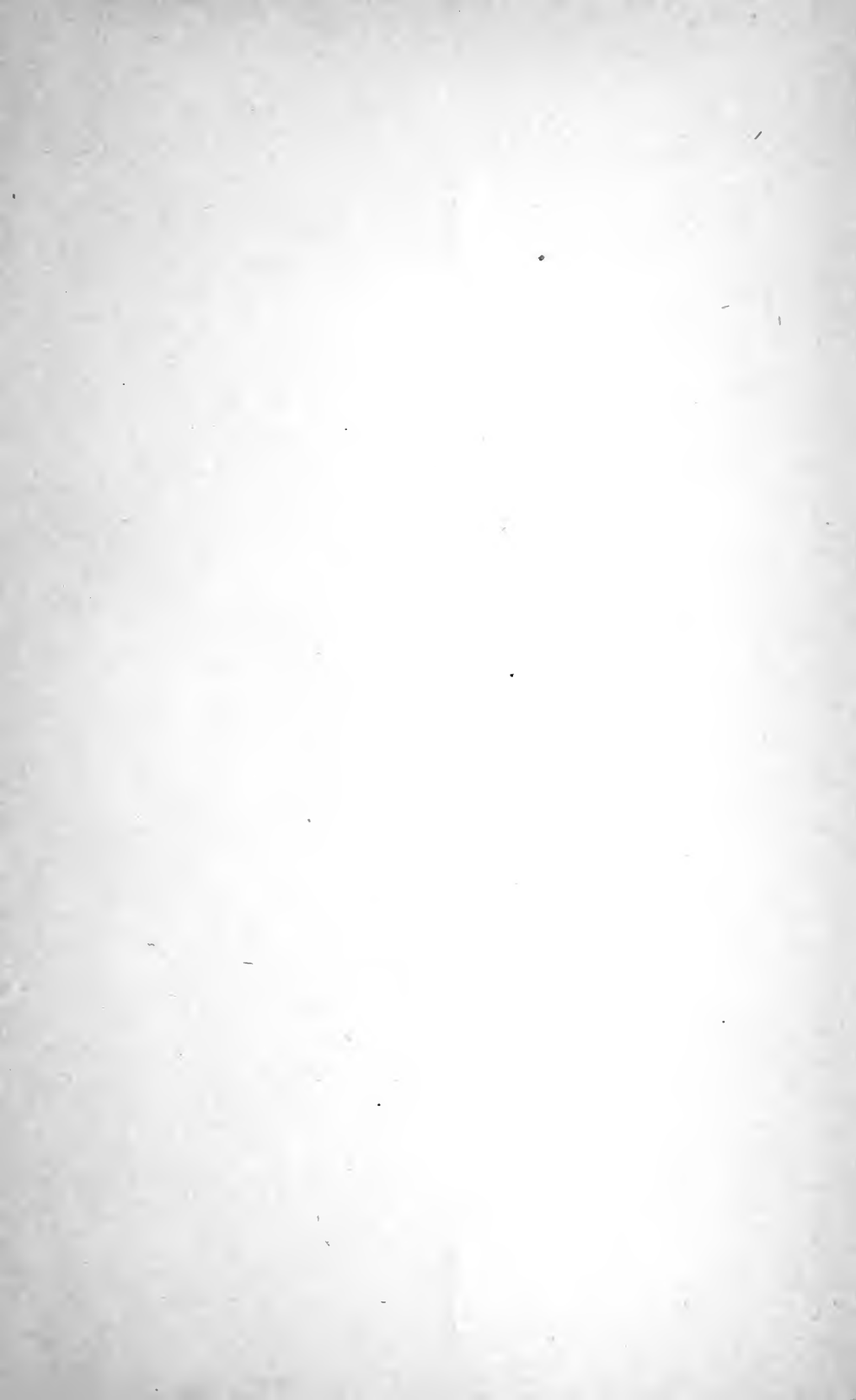
4. To *Clerk of Court*,<sup>102</sup> same amount for his recording fee as is provided for the fee to be paid to the Secretary of the Commonwealth, i. e. for charters or amendments of 2 pages or less (for each page in excess of 2, 50 cents must be added).....\$3.00.

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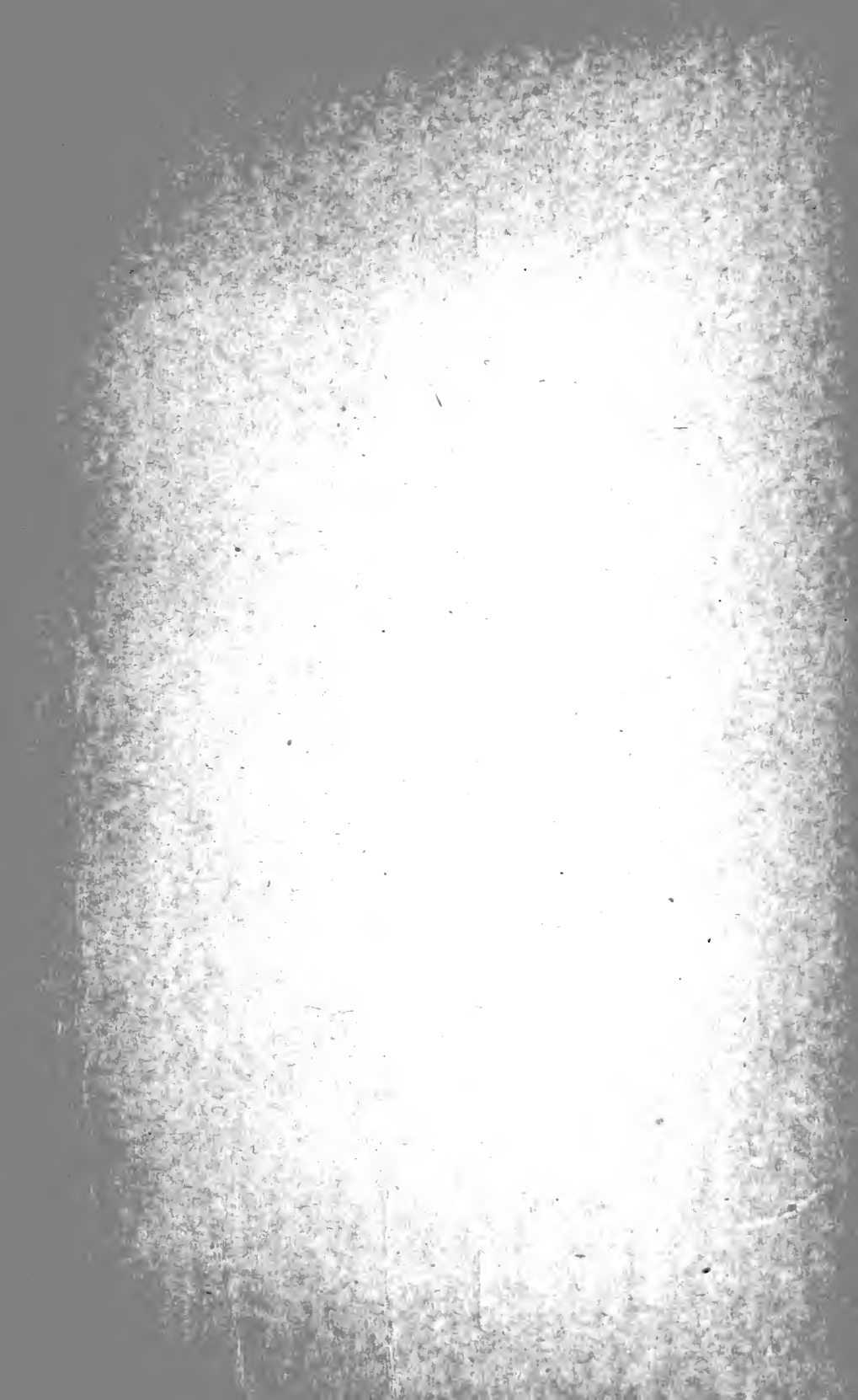
<sup>102</sup>In case of doubt as to the proper court in which the instrument is to be recorded, the check can be made payable to the State Corporation Commission, who will endorse it to the proper official.













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